

Regulation of Fiberoptic
Integrated Broadband
Networks:
Common Carriage,
Ownership and Rates

by Michael Botein

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REGULATION OF FIBEROPTIC INTEGRATED BROADBAND NETWORKS: COMMON CARRIAGE, OWNERSHIP AND RATES

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I. INTRODUCTION

Integrated broadband networks (IBNs) will use fiberoptic technology to transmit large amounts of information, ranging from high-speed data to entertainment programming, to business and residential users. Currently, experimental fiberoptic links can carry the equivalent of several thousand television channels. By comparison, state-of-the-art cable television systems only offer about seventy channels. IBNs thus have the potential of increasing the bandwidth available for business and home applications by several orders of magnitude.

Deployment of IBNs is still far in the future. Observers differ as to when IBNs may become economically viable. Predictions, however, range from the next decade to the next millennium. Nevertheless, policy makers already have begun analyzing potential regulatory policies for IBNs.¹ Naturally, a key question in this analysis is defining

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1. INTEGRATED BROADBAND NETWORKS: THE PUBLIC POLICY ISSUES (M.C.J. Elton ed., forthcoming).

how IBNs fit into the present regulatory regime. IBNs' interaction with regulatory and legal norms will influence their development. This interaction also may affect the legal and regulatory policies applicable to traditional media by changing underlying policy assumptions.

This discussion will focus primarily on U.S. economic policies, drawn from the Communications Act of 1934² and the U.S. antitrust laws.³ Thus, the Federal Communications Commission (FCC) and the District Court for the District of Columbia (D.C. District Court) are of major concern.⁴ The focus on economic and antitrust policy is not to diminish the importance of other legal or regulatory issues. Common law principles are relevant in a variety of ways. For example, the allocation of defamation liability between speaker and carrier might have a substantial impact on a network's structure.⁵ State regulatory authorities also may play an increasingly significant role in IBN development, in terms of both telecommunications and industrial policy. For example, some agencies have recently liberalized their restraints on local telephone companies to promote investment in fiber, while others have encouraged consortia of networks and users to develop IBNs.

II. REGULATORY STATUS OF IBN

Historically, different types of media have required different constitutional and regulatory treatment. As the Supreme Court has stated *ad infinitum*, "differences in the characteristics of new media justify differences in the First Amendment standards applied to them"⁶ Over the years, American jurisprudence has created a spectrum of possible constitutional and regulatory statuses for the media. This spectrum runs from no regulation at all to close scrutiny. A newspaper is subject to virtually no economic regulation and has complete editorial

2. 47 U.S.C. §§ 151-613 (1988).

3. 15 U.S.C. §§ 1-5201 (1988). The most significant exegesis on antitrust policy in the context of the telecommunications industry has come from the divestiture of the American Telephone & Telegraph Company (AT&T), under the aegis of Judge Harold H. Greene in the *Modification of Final Judgment*. *United States v. American Tel. & Tel. Co.*, 552 F. Supp. 131 (D.D.C. 1982), *aff'd sub nom. Maryland v. United States*, 460 U.S. 1001 (1983).

4. The FCC regulates the rates and services offered by telecommunications firms. The courts adjudicate disputes as to anti-competitive practices or structure.

5. For an excellent discussion of common law and statutory principles, see M. Meyerson, 3 U. FLA. J.L. & POL'Y 49 (1990).

6. *Red Lion Broadcasting Co. v. FCC*, 395 U.S. 367 (1969), quoting *Joseph Burstyn, Inc. v. Wilson*, 343 U.S. 495, 503 (1948) (The Court acknowledged that the medium of broadcasting possesses a first amendment interest but, reflective of the different technologies employed in this particular form of communication, different first amendment standards would apply.).

responsibility,⁷ as well as liability, for its contents. A local exchange telephone company (LEC), however, is subject to relatively strict financial scrutiny even in a deregulated environment and has no control over, or liability for, the contents of its transmissions.⁸

Over the last decade, the positions of various electronic media have become increasingly unclear. Traditionally, most observers viewed broadcast media as less protected than print, and cable as less than broadcasting.⁹ However, in several recent lower court cases, cable operators have had some success in establishing themselves as "electronic publishers,"¹⁰ and therefore immune from traditional economic regulation. If this trend prevails, it could redefine the regulatory spectrum.

In terms of the regulatory spectrum, this discussion will focus on the two polar extremes: freedom from regulation and traditional public utility regulation. The first inquiry is whether IBNs should be subject to regulation at all. Assuming that IBNs should be, the second question is defining the proper type of regulation: that is, whether IBNs would be best suited for conventional rate-of-return regulation as opposed to informal price monitoring.¹¹ The increasingly large number of reg-

7. *Miami Herald Pub. Co. v. Tornillo*, 418 U.S. 241 (1974). (The Supreme Court held that a Florida statute granting political candidates the right to reply to editorials attacking their personal character was an unconstitutional violation of the newspaper's first amendment rights.)

8. *See Sable Communications of Cal. v. FCC*, 109 S. Ct. 2829 (1989).

9. *E.g.*, *Carter Mountain Transmission Corp. v. FCC*, 321 F.2d 359 (D.C. Cir.), *cert. denied*, 375 U.S. 951 (1963).

10. *E.g.*, *Home Box Office v. FCC*, 567 F.2d 9 (D.C. Cir. 1977) (Involved a challenge to rules intended to prevent the siphoning of programming from over the air "free" TV to cable. The court emphasized that the scarcity rationale, which limits the first amendment rights of broadcasters due to the limited amount of available space on the electromagnetic spectrum, was not applicable to cable and therefore that cable operators were to be afforded a greater degree of first amendment protection.), *cert. denied*, 434 U.S. 829 (1977); *Quincy Cable TV, Inc. v. FCC*, 768 F.2d 1434 (D.C. Cir. 1985) (Involved a challenge to the "must carry rules" which required cable operators to carry the signal of any "local" broadcast station. Once again, the court held that cable operators were entitled to a greater degree of first amendment protection than broadcasters. In reaching this conclusion, the court noted that the scarcity rationale did not apply to cable operators and that the use of public rights of way does not warrant intrusion into a cable operator's first amendment rights.); *Cruz v. Ferre*, 755 F.2d 1415 (11th Cir. 1985) (The court struck down as unconstitutional a Miami ordinance intended to regulate indecent and obscene material on cable television. In rejecting an argument to apply the rationale of *Pacifica*, the court noted that cable lacked the pervasiveness of broadcasting and was therefore entitled to a greater degree of first amendment protection.). So far, the Supreme Court effectively has not passed on the question of defining cable's first amendment rights, other than acknowledging that the medium has some. *City of Los Angeles v. Preferred Communications, Inc.*, 476 U.S. 488 (1986).

11. *See infra* note 68.

ulatory permutations and combinations could subject new media to "hybrid" regulation, combining aspects of the traditional print, broadcast, and public utility approaches.¹² The dichotomy between print and public utility models is the most significant, since a decision to treat IBNs as common carriers would answer a variety of other questions. Although common carrier status requires offering adequate service to all paying customers at reasonable rates, the extent of regulation may vary.¹³ Thus, the narrow issue is identifying the most appropriate type of common carrier regulation.

In contrast, classification of IBNs as hybrids instead of common carriers would require creation of a totally new regime, an endeavor which only after more than two decades is beginning to stabilize U.S. cable television regulation.¹⁴ This is not to suggest, however, that common carrier regulation of IBN would avoid policy decisions, but rather that the initial regulatory classification is very significant. Due to IBNs' limited development, the definitional task is difficult. Despite the commercial and academic interest in IBNs, they may not exist as a viable economic entity until well into the next century.¹⁵ Nevertheless, some preliminary observations are necessary regarding IBNs' regulatory classification and treatment.

The traditional reason for classifying an entity as a public utility, or more specifically as a common carrier, is the entity's natural monopoly characteristics.¹⁶ A declining cost curve dictates not only that a dominant firm can keep all others out, but also that a single firm can offer consumers the lowest possible price.¹⁷ The establishment of a legal monopoly requires a variety of attendant consumer protections, such as the regulations involved with common carriers, because of the monopoly's ability to charge supracompetitive prices and/or provide inferior service.

12. In the context of telecommunications, of course, public utility treatment translates into the subset of common carrier regulation. For example, the FCC has reclassified, as "private radio," media previously subject to either broadcast or common carrier regulation. Hammond, *To Be or Not to Be: FCC Regulation of Video Subscription Technologies*, 35 CATH. U. L. REV. 737 (1986).

13. See *infra* note 74 and accompanying text.

14. See, e.g., Meyerson, *Cable Television's New Legal Universe: Early Judicial Response to the Cable Act*, 6 CARDOZO ARTS & ENT. L.J. 1 (1987).

15. Johnson & Reed, *Residential Broadband Services by Telephone Companies?*, TECHNOLOGY, ECONOMICS & PUBLIC POLICY 41 (1990).

16. Natural monopoly status naturally would allow a firm to raise prices or decrease services, because of the absence of any competition.

17. E.g., C. PHILLIPS, JR., *THE REGULATION OF PUBLIC UTILITIES* 35-65 (1984).

Translating this phenomenon into legal terms is problematic. The FCC and the courts have been unable to craft a satisfactory definition of common carriage in more than fifty years of regulation.¹⁸ However, the basic concept is simple: a common carrier either holds itself out by its business practices or is required by law to serve any qualified customer.¹⁹ Yet, the Communications Act of 1934 failed to clearly delineate the classification, by circularly defining a "common carrier" as "a common carrier for hire in interstate or foreign communication by wire or radio or in interstate or foreign radio transmission of energy."²⁰ Furthermore, the FCC added little by defining a "communications common carrier" as "any person engaged in rendering communication service for hire to the public."²¹ Finally, the courts have continued to complicate the issue. As the D.C. Circuit remarked in a seminal case:

One may be a common carrier though the nature of the service rendered is sufficiently specialized as to be of possible use to only a fraction of the total population. . . . But a carrier will not be a common carrier where its practice is to make individualized decisions, in particular cases, whether and on what terms to deal.²²

Thus, common carriage appears to include any general offering of communications service to any class of consumers, allowing the FCC and the courts a large degree of discretion.

Consequently, although the common carrier rationale should apply only to a natural monopoly, the FCC has imposed some common carrier obligations upon firms that clearly were not natural monopolies.²³

18. See *infra* note 22.

19. 47 C.F.R. § 21.2 (1989).

20. 47 U.S.C. § 153(h) (1982).

21. 47 C.F.R. § 21.2 (1989).

22. National Ass'n of Regulatory Util. Comm'rs v. FCC, 525 F.2d 630, 641 (D.C. Cir. 1976) (While addressing an FCC proposal to allocate spectrum space for use as mobile radio, the court stated it was unnecessary that a common carrier be required to serve all indiscriminately; it was enough that its practice was, in fact, to do so. Further, one must look to how the service functions; if it looks like a common carrier, it will be regulated as one.), *cert. denied*, 425 U.S. 992 (1976) [footnotes omitted]. Cf. National Ass'n of Regulatory Util. Comm'rs v. FCC, 533 F.2d 601 (D.C. Cir. 1976) (Challenge to FCC's attempt to preempt state common carrier regulation over the use of cable system leased access channels for two-way, point-to-point, nonvideo communication. The court noted that one may be a common carrier by virtue of the actual activities carried out. Moreover, the court continued, one can be a common carrier with regard to some activities but not others.).

23. See, e.g., *supra* note 5 (the discussion of MMDS).

Nevertheless, the statute seems to contemplate that a firm have some natural monopoly characteristics before treating it as a common carrier.

IBNs may require common carrier status for two different reasons. First, IBNs could evolve into natural monopolies. Second, and perhaps more likely, IBNs may be owned by a natural monopoly, such as LECs. Under the second alternative, common carrier regulation would be necessary to prevent a parent company from subsidizing an IBN with revenue earned by virtue of its natural monopoly status, or, conversely, from buying IBN services at artificially high prices. The former situation would be equivalent to AT&T's pre-divestiture subsidy of its Bell Operating Companies (BOCs) from long distance revenues.²⁴ The latter compares to the BOCs' "goldplating" of their plants through buying equipment at supracompetitive prices from AT&T's unregulated manufacturing arm.²⁵ Realistically, natural monopoly-owned IBNs may ultimately require common carrier regulation, if only for political reasons.

If not owned by a natural monopoly, such as an LEC or another common carrier, an IBN might not require common carrier regulation. IBN technology is far from settled. Whether IBNs will exhibit characteristics of a natural monopoly remains questionable. If IBNs do follow the traditional pattern of telecommunication carriers, they would need sophisticated central office switches and network control equipment.²⁶ The high cost of these items would probably create a declining cost curve, a key characteristic of a natural monopoly.²⁷

Whether IBNs will develop along these lines remains unclear. In general, the current United States telecommunications industry relies increasingly on decentralized facilities — leading to the christening of "the geodesic network."²⁸ Furthermore, some observers theorize that an IBN's massive channel capacity will require relatively little centralization since the large amount of bandwidth available for network overhead could enable users to perform many of the switching and control

24. See *supra* note 17, at 621-644.

25. *Id.*

26. The former for route trafficking between customers of the local exchange; the latter for long-distance calls to the appropriate networks.

27. See *supra* note 17.

28. Peter W. Huber, *The Geodesic Network: 1987 Report on Competition in the Telephone Industry* 1.31-36 (1987). Dr. Huber drafted his report as a consultant to the Antitrust Division of the Department of Justice, in preparation for its recommendations to the D.C. District Court on its first review of the *Modification of Final Judgment*.

functions.²⁹ Whether and to what extent this turns out to be the case, of course, is sheer speculation. Nevertheless, this possibility might give one pause before imposing strict common carrier regulation at such an early phase in IBN development. This consideration might be mooted, however, if present common carriers own IBN systems. Since both long distance and local exchange carriers seem likely candidates for IBN operations, common carrier regulation may be necessary, if only to prevent past problems with cross-subsidization and goldplating.

In sum, IBNs are likely candidates for common carrier regulation, because of the natural monopoly characteristics associated with them or their parent companies. If IBNs are regulated as common carriers, the next question is: to what extent should traditional common carrier policies be altered in order to adapt to IBNs' potential characteristics?

III. REGULATION OF IBN PRACTICES

Regulation of a firm's practices depends largely upon an industry's characteristics. The number of firms and amount of competition are particularly important, since the greater the atomistic nature of an industry, the lesser the likelihood of monopolistic or cartel-like behavior. This consideration again highlights the significance of IBNs natural monopoly status.

If only one firm can operate in a field, more concern arises with respect to potential exclusionary conduct. For example, allowing cable operators, particularly vertically integrated ones, to operate IBNs could create incentives for excluding third-party programming. Moreover, if an IBN were considered a natural monopoly, allowing a cable operator to control the IBN would compound concerns.

Alternatively, if IBNs compete within the same field, little reason would exist to prevent one or more cable operators from controlling an IBN. This approach would be somewhat similar to the FCC's regulation of cellular radio.³⁰ For cellular radio, the FCC allocates half of the available spectrum in each market to groups of "wireline" carriers, such as LECs, and the other half to "non-wireline" firms, such as local broadcasters.³¹

29. *E.g.*, *International Networks*, Sept. 15, 1987, at 1.

30. Cellular radio includes both automotive and hand-held telephones.

31. Cellular Communications System, 86 F.C.C.2d 469 (1981), *recon.* 89 F.C.C.2d 58, *recon.* 90 F.C.C.2d 571 (1982). The wisdom of this approach is open to question. By giving the existing LEC the right to apply for a cellular license with virtually no prospect of a competing application, the FCC may have given wireline carriers a headstart in getting on the air as indicated by the haste with which non-wireline carriers rushed to form consortia to file untested applications. Nevertheless, the basic concept may have some validity.

Once again, IBN's very early stage of development impedes drawing any conclusions about potential industry structure. Nevertheless, analyzing the range of possibilities may be useful in considering policy alternatives.

A. *Provision of Services and Programming by IBN Operators*

Traditional common carrier policy prevents carriers from providing or controlling the intelligence transmitted by the carrier.³² If IBNs are treated as quasi-carriers, as once proposed for cable television systems, traditional reasons for prohibiting them from providing content services may be questionable. Indeed, the FCC may experience pressure to adopt a cable-type of "hybrid" regulation which allows firms to provide their own services, yet provides access rights to third parties.³³ Taking this stance at the very beginning of IBN's development, however, may not be advisable. Indeed, one of the turning points in cable regulation may have been the rejection of a 1974 White House proposal to regulate cable as a common carrier.³⁴

If IBNs exhibit monopoly characteristics, they should not be allowed either to offer their own services or to control third parties' content. If an IBN provided programming, it would have an incentive to interfere with third-party programmers' services. Indeed, the IBN's position would be highly analogous to the BOCs' discrimination against the other common carriers (OCCs)³⁵ before the AT&T divestiture.³⁶ Until barred from operating cable television systems, the BOCs used their control over conduits and poles to delay the entry of cable systems.³⁷

32. Recently, this time-honored principle has been sorely tried by litigation involving use of LECs' "976" numbers to transmit sexually provocative recordings, commonly known as "dial-a-porn." When faced with a congressional mandate to clean up dial-a-porn, the FCC first limited it to late night hours, and then, under judicial pressure, required the users to have special access codes, and ultimately found itself unable to apply the access code requirement to NYNEX because of technological problems. *Carlin Communications v. FCC*, 787 F.2d 846 (2d Cir. 1986). More recently, the Supreme Court held that Congress could not ban "indecent," as opposed to "obscene," material from LECs. *Sable Communications of Cal. v. FCC*, 109 S. Ct. 2829 (1989).

33. 47 U.S.C. § 532 (Supp. 1989).

34. Cabinet Committee on Cable Communications Reports, (1974) (commonly known as "the Whitehead Report").

35. As the rather inelegant name implies, other common carriers are long-distance telephone companies, e.g., MCI, Sprint, competing with AT&T. For a more thorough discussion of the firms in this field, see Botein & Pearce, *The Competitiveness of the U.S. Telecommunications Industry: A New York Case Study*, 6 CARDOZO ARTS & ENT. L.J. 233, 243 et. seq. (1988).

36. *Id.*

37. *General Tel. of the S.W. v. United States*, 449 F.2d 846 (5th Cir. 1971) (The court held that the FCC was acting justifiably and within its statutory authorization by promulgating rules

B. Ownership of IBNs

Prohibiting IBNs from offering their own services and from controlling third party content would lessen the severity of ownership concerns. Strict separation of content and conduit should at least remove an IBN's incentive to interfere with the third party, since the IBN would have nothing to gain. Such a common carrier policy, however, might not be a panacea.³⁸

Even though a firm may not benefit directly from excluding a non-competitive company, it may act coercively to help a parent or affiliated company. For example, some of the BOCs' most abusive tactics towards OCCs and cable operators occurred under the tightly regulated regime of the early 1970s.³⁹ Although the BOCs had little or nothing to gain by preventing competition from the OCCs, AT&T did.⁴⁰ Indeed, the D.C. District Court held that this anti-competitive frame of mind had not dissipated as a result of divestiture.⁴¹ Firms also attempt to prevent entry where, although currently unable to provide a competitive service, the firms anticipate being able to enter the market at some later date. The BOCs' antipathy towards cable operators, even after the FCC prohibited BOCs from owning cable systems,⁴² indicates that long-term exclusion of competition may be an incentive for IBN operators. Common carrier status alone will not rule out abuse, if an IBN's parent company has the incentive to injure a competitor. Regardless of justifications, common carrier regulation per se does not obviate restrictions on IBN ownership. Thus, an attempt to identify types of media firms with an incentive to exclude third parties, even under a common carrier regime, may be useful.

prohibiting telephone companies entering the cable business. The rules prohibited telephone companies from providing cable service, either directly or through affiliates, and constructing cable facilities for independent cable operators unless the carrier first offered such operators the option of placing their own cables on the carriers' poles. This decision stemmed from a concern that common carriers were favoring their own subsidiaries in areas such as pole rentals and access to conduit and poles.).

38. The fact that a market can support only a single firm may justify a firm's acquisition of economic power. *Official Airline Guides v. FTC*, 630 F.2d 920 (2d Cir. 1980), *cert. denied*, 450 U.S. 917 (1981) held that the then acknowledged "Bible" of airline schedules was justified in refusing to list commuter airlines flights, since a natural monopolist was entitled to make discretionary decisions on a non-economic basis. To a very real extent the court may have been concerned with first amendment notions of "journalistic discretion" and the like. *E.g.*, *Miami Herald Pub. Co. v. Tornillo*, 418 U.S. 241 (1974).

39. *See supra* note 38.

40. *United States v. Western Elec. Co.*, 673 F. Supp. 525 (D.D.C., 1987).

41. *Id.*

42. *See supra* note 38.

In order to assess potentially dangerous cross-interests, an understanding of IBNs' product market, although speculative, is necessary. Many observers believe that, at least initially, IBNs will provide video programming as the ultimate extension of pay-per-view marketing.⁴³ Indeed, the only operational IBN-style facility focuses largely on random access programming and videoconferencing.⁴⁴ Moreover, in order to justify the cost of building IBNs, LECs may require this type of additional revenue from home entertainment programming.⁴⁵ Finally, with the advent of relatively high-speed integrated services digital network (ISDN) links, present networks are probably capable of handling all but the largest firms' voice and data transmission needs. Thus, IBNs' potential market for these services currently seems relatively small. Alternatively, if IBNs offered competitively priced voice and data communication, the discussion below would require some expansion.

With these assumptions in mind, identifying problems with potential ownership of IBNs by existing industries is possible. In the context of IBN, as opposed to telephony, few incentives to interfere with third-party services seem to exist. First, since an LEC is a common carrier and thus subject to common carrier regulation, many anti-competitive practices will be prevented. More important, since LECs have virtually no experience in marketing video programming or similar services, they will have no market to protect. This conclusion is evidenced by the BOCs' recent attempt to move into the videotex and data base markets, which the D.C. District Court soundly rebuffed.⁴⁶

Whether IBN becomes a major provider of voice and data services, however, remains to be seen. If IBNs primarily supply video programming, the LECs would find themselves with little experience, and perhaps little incentive, for providing content in addition to carriage. Entering the video programming market would place LECs in direct competition with broadcasters, cable operators, and motion picture studios — all of which have substantially more background than the LECs in marketing video programming. The LECs, however, do have substantial experience and expertise in the "nuts and bolts" aspect of

43. See Johnson & Reed, *supra* note 15, at 14 et. seq.

44. Gerin, *The Biarritz Fiberoptic System*, CABLE TV LAW & FINANCE, May 1986, at 1.

45. A high-level BOC executive recently estimated that additional per-customer revenues of \$30.00 per month would be necessary to pay for the cost of building an IBN. Interestingly enough, the average national cost of cable service is just a bit less than this amount. U.S. General Accounting Office, *Telecommunications: National Survey of Cable Television Rates and Services* 24, 44 (1989).

46. *Western Electric*, 673 F. Supp. at 600-04.

making an IBN work.⁴⁷ Thus, an LEC's economies of scale might be on the hardware rather than software side. Further, any effort by the BOCs to offer content probably would repeat their unsuccessful attempt to offer data base services to videotex providers.⁴⁸

Much the same reasoning would apply to AT&T and OCCs, which also lack experience in producing or marketing video programming, and have no immediate incentive to suppress third party IBN users. As with the BOCs, history could repeat itself. For example, AT&T's suppressed cable development.⁴⁹ Apparently, AT&T's long-term interest in entering the cable television business provided only a secondary motivation for exclusionary practices.⁵⁰ AT&T's primary incentive was to coerce cable operators into leasing facilities from the BOCs, rather than building their own plants. Thus, a local exchange or long-distance carrier might be interested in forcing programmers to migrate from other facilities, such as cable systems, to its network.

Presumably, neither the LECs nor the long-distance carriers would have this exclusionary incentive in the IBN context. If IBNs lack natural monopoly characteristics, competing systems would be feasible. Thus, an IBN operator presumably would have no reason for forcing programmers to use its network, because its operation would not be the only one available.⁵¹ On the positive side, long-distance carriers have substantial experience with installation of networks in general, and of fiberoptics in particular. Therefore, like the LECs, long-distance carriers may have economies of scale and scope. Consequently, operation of IBNs by either LECs or long-distance providers seems to pose little danger of excluding competitors and offers at least possible economies.

The current video media, particularly cable television, present an almost exactly opposite situation. Cable operators already provide video programming, and presumably would compete head-to-head with IBNs despite being saddled with low-bandwidth, obsolete, and expensive coaxial cable systems. Moreover, during the last few years many cable operators have vertically integrated with program suppliers, as shown by the cable industry's ability to prevent third parties from offering "pay" and other satellite channels to earth station owners.⁵²

47. Nuts and bolts include installation, maintenance, and billing.

48. *Western Electric*, 673 F. Supp. at 587-88.

49. *See supra* note 17 and accompanying text.

50. *E.g.*, *California Water & Tel. Co.*, 13 F.C.C. 2d 40 (1968).

51. This might not be the case during early IBN deployment, however, while cable systems still pose effective competition.

52. *E.g.*, *Broadcasting*, Nov. 30, 1987, at 116-117.

The cable industry has every reason to view IBNs as potentially destructive competition, which provides incentive to either kill or control IBNs.⁵³

If the cable industry dominated IBNs, it would have an incentive to exclude third party suppliers. Indeed, cable operators waged a largely successful battle to keep third parties off their systems,⁵⁴ and the rather vague "leased access" provisions of the 1984 Cable Act seem to provide little relief. Moreover, the cable industry has little experience with either switched networks or fiberoptics. United States cable systems have "tree and branch" architecture, unlike the traditional "central office" approach in telephony. Additionally, cable operators use fiber only to a very limited extent.⁵⁵

Overall, cable operators seem to have every reason to exclude third parties from IBNs, while possessing very little relevant operational experience. This situation provides some irony, since it mirrors the telephone industry's attempts to control cable television two decades ago.⁵⁶ During that time, the cable industry has grown strong enough to utilize the same strategy on IBNs.

Exclusion of cable from IBN ownership, however, would not sound the death knell for the cable industry. First, IBNs will develop slowly. Second, considering that cable's capital costs would be much lower than IBN's, both industries would probably operate side-by-side for a long period of time.⁵⁷ Finally, the cable industry's increasing vertical integration suggests that its ultimate role may be as a program provider, rather than as a network operator.

Similar considerations apply to broadcast television networks and stations. As with cable operators, indirect sales of video programming through advertising revenues give the networks an incentive to exclude third parties. Also, though not as vertically integrated as some cable operators, the networks have strong ties to program pro-

53. One indication of this is the cable industry's attempt to prevent LECs' from securing federal legislation to allow entertainment video services. Broadcasting, Oct. 22, 1990, at 33.

54. In *New York Citizens Comm. on Cable TV v. Manhattan Cable TV*, 651 F. Supp. 802 (S.D.N.Y. 1986), the court adopted the novel holding on a motion to dismiss that Time's refusal to offer pay services other than its own might violate the antitrust laws. The case ultimately was settled.

55. Cable operators use fiber in their "backbone" trunk lines, rather than in their residential distribution plants. To a certain extent, cable's recent, highly-publicized use of fiber may have more political than technological value, as a means of arguing that cable can deliver the same services as LECs.

56. See *infra* note 61.

57. In the last decade, a large part of the cable industry has incurred the cost of upgrading to relatively high-capacity, that is fifty or more channels.

ducers.⁵⁸ Conversely, neither networks nor broadcasters have any experience in operating telecommunications facilities or in constructing fiberoptic networks. Thus the networks seem to have potentially conflicting interests and no economies of scale or scope.

In the long run, television networks might be irrelevant, since they may not exist by the time that IBNs arrive. Cable's recent expansion leads many to predict that mass communications will move from over-the-air transmission to cable by the end of the century.⁵⁹ Under this approach, the networks might change from distributors to program producers. Even under this scenario, however, networks still would have an incentive to exclude competing programs from IBNs.⁶⁰

In terms of cross-ownership policies, LECs and long-distance carriers seem to be the most appropriate entities to operate IBNs. Telephone carriers not only have comparatively few conflicts of interest with third-party IBN users, but also enjoy some economies of scale. Moreover, they probably are better positioned than other media to generate the large amounts of capital necessary to build IBNs. While cable operators and broadcast entities typically have small cash reserves, telephone companies have relatively large amounts. To illustrate, the entire cable industry currently has gross revenues roughly equal to two of the seven Regional Bell Operating Companies.

This discussion of cross-ownership naturally has not considered other possible rationales for ownership restrictions. At least three other types of limitations seem possible: alien ownership, cross-ownership of local and long-distance networks, and ownership of more than one IBN.

First, the Communications Act traditionally prohibits aliens from owning more than twenty percent directly, or twenty-five percent through a holding company, of any "broadcast or common carrier . . . license"⁶¹ The reasons behind the statute are less than clear. Apparently, the restrictions stem from an early fear that hostile countries would use radio to transmit either propaganda or military information.⁶² In comparison, cable television seems particularly unsuited

58. Report & Order, 23 F.C.C. 2d 382 (1970).

59. Broadcasting, Nov. 30, 1987, at 62.

60. Another consequence of such a development — far beyond the scope of this paper — is the effect on poor and rural people, who cannot afford IBN service; this problem is just another side of the "universal service" issue.

61. 47 U.S.C. § 310(b) (1982).

62. Report & Order, 59 F.C.C. 2d 723 (1976). The FCC had discretion not to impose the limitations, since the statute refers only to "broadcasters" or "common carriers," and cable is neither.

for either of these purposes. Thus, the FCC chose not to impose alien ownership restrictions upon it.⁶³ The same logic should apply to IBNs, since an IBN operator is unlikely to have as much control as a cable operator over use of its system. Moreover, foreign capital could be extremely helpful in implementing a capital-intensive enterprise such as IBNs. This result would be similar to the significant foreign investment in the cable industry. Given some countries' intense interest in entering the fiberoptics market, investment in a United States IBN system could be an attractive means of forging commercial alliances and reciprocal dealings.

Second, whether the same entity should be allowed to own both local and long-distance IBN facilities should be considered. The reasoning behind the *Modification of Final Judgment* in the AT&T divestiture was to prevent the possibility of AT&T using an LEC to discriminate in favor of AT&T and against the OCCs.⁶⁴ These policy considerations, however, would not apply in the context of IBNs. Traditionally, telephony's natural monopoly characteristics are stronger for local than long-distance networks, because of the high costs of central office facilities. This phenomenon may not exist with IBNs, however, given the large bandwidth coupled with the cost of long-distance fiberoptic networks. If this situation resulted, ownership of local and long-distance transmission facilities would create no danger of exclusionary tactics, since no potential competition on this level would exist. On the other hand, allowing different firms to provide local and long-distance service might be advisable, solely to increase the number of players in the IBN game. Arguably, such a system could lead to better research and development.⁶⁵

Finally, limiting the number of local IBNs owned by a single entity might be beneficial. Such restrictions would be analogous to the FCC's multiple broadcast ownership rules, which restrict any entity to a total of twelve AM, FM, and TV stations, or television coverage of twenty-five percent of the population.⁶⁶ Alternatively, IBNs probably will be much more passive than broadcasting in terms of program content control. Thus, the FCC's refusal to impose multiple ownership limita-

63. *Id.*

64. *AT&T*, 552 F. Supp. at 131.

65. For example, total combined funding of R&D by AT&T and the BOCs increased after divestiture. Noll, *Bell Systems R&D Activities: The Impact of Divestiture*, TELECOMMUNICATIONS POLICY, June, 1987, at 161.

66. 47 C.F.R. § 73.636 (1987).

tions on cable,⁶⁷ which is probably far less passive than future IBNs, militates against multiple ownership restrictions on IBNs. If IBNs ultimately become the sole means for providing video programming and are not common carriers, however, traditional first amendment diversity principles would support common ownership limitations.⁶⁸ In addition, diversification of ownership would benefit research, development, and innovation.

The advent of IBNs raises a number of difficult and unanswerable questions. Which entities should be allowed to own IBNs? Should the same entity own both local and long-distance facilities? Should a limit on multiple ownership of IBNs be imposed? As with other IBN policy issues, only tentative observations are possible at this early stage.

IV. REGULATION OF RATES AND PRACTICES

If IBNs are treated as common carrier, regulation of their rates and practices would be appropriate, if not inevitable. Regulators review rates not only to insure that the public receives the benefits of a natural monopoly's declining cost curve, but also to prevent a monopolist from manipulating its rate structure to exclude competition.⁶⁹ Similar concerns underlie scrutiny of a firm's practices in dealing with both the public and third-party users. Despite these traditional concerns, IBNs may avoid close regulation of either rates or practices.

A. Rates

Unlike in the past, classification of an entity as a common carrier does not necessarily subject it to rate-of-return regulation. In the past, rate regulation effectively meant rate-based rate-of-return regulation.⁷⁰ Under the traditional approach, a regulatory agency first determines a firm's expenses, then establishes the value of its plant

67. This policy may face reexamination in the future; as a result of recent mergers and acquisitions, a handful of firms control more than half of the cable subscribers in the country. In general, the FCC has shied away from multiple ownership restrictions for new video and media, on the ground that they are still developmental. Report & Order, 52 P&F Rad. Reg. 2d 257 (1982).

68. *E.g.*, *Associated Press v. United States*, 326 U.S. 1 (1945) (Involved an anti-trust challenge to Associated Press (AP) by-laws which prohibited AP members from selling news to non-members and granted existing members the ability to block competitors from gaining membership. The court stated "The fact that the publisher handles news while others handle food does not . . . afford the publisher a peculiar constitutional sanctuary in which he can with impunity violate laws regulating business practices.").

69. Phillips, *supra*, note 17, at 51-63.

70. *Id.*

(the rate base), and finally sets a rate of return sufficient to attract future investments.⁷¹ This approach has been less than popular with regulators, firms, and the public.⁷² All stages of the ratemaking process involve often inevitable decisions. Consequently, many regulators seem to resign themselves to simply making rough guesses; some agencies routinely and Solomonically give firms half of their requests.

In response to this disenchantment and deregulation, many agencies moved away from rate-of-return regulation.⁷³ The FCC requires only "dominant" carriers, which essentially refers to AT&T, to justify their rates.⁷⁴ Recently, the FCC totally scrapped rate regulation of long-distance carriers except for core or basic services. In its place, the FCC adopted a "price cap" approach, under which a carrier may set any rate that falls under a predetermined maximum.⁷⁵ Thus, today a relatively wide range of alternative regulatory schemes exists for common carriers, ranging from the traditional rate-of-return regulation to the recent price cap approach.

At this early stage in IBN development, what, if any, regulation would be appropriate for the IBN industry is difficult to determine. Due to economic and political reasons, however, to assume that IBNs would necessarily be subject to some form of regulation is fair. First, an IBN owned or operated by an established common carrier, creates the possibility of cross-subsidy. From a practical stand point, regulation of the parent would necessarily include regulation of the subsidiary. Similarly, prevention of an IBN from discriminating against competitors would require some regulatory scrutiny.

Although IBNs probably will be subject to some sort of regulation, it is likely that the regulation will be relatively lenient. First, as a new industry, minimal regulation would be required to provide IBNs with the flexibility needed to respond to new and changing market conditions.⁷⁶ Second, IBN's status as a newcomer indicates that rate-of-return regulation would be enigmatic. Since no real bench-marks exist, it would be difficult, if not impossible, for a regulatory agency to make informed decisions as to the reasonableness of either revenues or expenses. For example, an IBN conceivably would have higher promo-

71. *Id.* at 229-377.

72. *See generally*, THE CRISIS OF THE REGULATORY COMMISSIONS: AN INTRODUCTION TO A CURRENT ISSUE OF PUBLIC POLICY 30-56 (P.W. MacAvoy ed. 1970).

73. L. JOHNSON, PRICE CAPS IN TELECOMMUNICATIONS REGULATION REFORM (1989).

74. *MCI Communications v. FCC*, 917 F.2d 30 (D.C. Cir. 1990).

75. First Report & Order, 85 F.C.C. 2d 1 (1980); Notice of Inquiry, 3 F.C.C. Red. 3195 (1988).

76. Initially, IBNs would have to generate substantial profits in order to attract capital.

tional costs than a long-established LEC, thus necessitating a higher rate of return. Assuming that IBNs resemble today's essentially unregulated cable industry, IBNs would arguably need an initial rate-of-return on the order of twenty-five percent, as opposed to twelve or thirteen percent now common in the telephone industry.

Most regulatory agencies have jurisdiction over discrimination as well as "unjust or unreasonable charges."⁷⁷ At least initially, the primary role of IBN rate regulation would be the former rather than the latter. This approach would protect IBNs' competitors, while preserving IBNs' flexibility. Moreover, extending any rate-of-return to a new industry would be difficult since the method is sufficiently dated.

B. Practices

In IBN regulation, guaranteeing access to IBNs by third-party-programmers is probably the most important consideration. This guarantee would insure full use of IBN's bandwidth which compares to dozens of cable television systems. As a result of this broad bandwidth, a host of new program producers and packagers might arise.

1. Access Characteristics

The basic concept of access differs with respect to IBNs and telephony. In the latter, access involves the ability to interconnect with an LEC's central office in order to transmit messages over the local network, such as by a long distance carrier.⁷⁸ IBNs, however, vary in two respects. First, IBNs' broad bandwidth will greatly diminish the importance of switches.⁷⁹ Second, IBN suppliers may need to use particular blocks of spectrum at specific times, such as video programming during prime viewing time. From a supplier's perspective, access concerns with IBNs thus may resemble those in the cable rather than in the telephone industry.

In contrast, IBN consumers probably will resemble telephone more than cable subscribers. To the extent that IBN users are provided with interactive applications, such as teleconferencing, the distinction between IBNs' program suppliers and program consumers will be more obscure than in the cable industry. From this perspective, IBN access concerns most likely will parallel those in today's telephone industry. Since access concerns represent a hybrid of the traditional,

77. *E.g.*, 47 U.S.C. § 201(b) (1982).

78. *E.g.*, *AT&T*, 552 F.2d at 131.

79. *See supra* note 29 and accompanying text.

yet differing, issues in the cable and telephone industries, an appropriate access scheme would likely be less stringent than traditional telephone tariffs, but more exacting than cable access requirements.

2. Probable Access Schemes

Obviously, a central part of any access scheme for IBNs will require that an IBN operator provide users with bandwidth not only on demand, but also at a non-discriminatory price. The reason for requiring bandwidth on demand is based on the anticipated structure of an IBN. Unlike contemporary cable operators, if IBNs achieve high capacity, an IBN operator could provide as much capacity as required without impairing its ability to sell programming. Consequently, only a minimal scheme would be required to insure access, since third-party users would receive any requested capacity.

Prevention of IBN operators from attempting to exclude competitors justifies the nondiscriminatory pricing requirement. If an IBN's charges were too high, a regulatory agency could invoke its power to police "unreasonable" or "unjust" rates.⁸⁰ However, judgments as to reasonableness would require considerable development in the IBN industry.

Additionally, problems might exist if IBN operators charged different rates at different times of the day. To the extent that IBNs have aspects of the mass media, some times of the day would be more valuable than others. If an IBN operator had enough capacity to fulfill all requests, however, little reason for imposing price differentials to ration scarce resources would exist. Yet, positing virtually unlimited channel capacity seems highly optimistic. After all, the FCC once hailed cable television "an economy of abundance."⁸¹ The reality, however, is a fierce battle by cable operators to keep third parties off their channels.⁸²

If demand exceeds supply with IBNs, like every other video medium, a more formal access scheme would be necessary.⁸³ However, experience with cable television access schemes provides two valuable lessons. First, most commentators fail miserably in proposing workable access schemes.⁸⁴ Second, though many cable operators willingly deal

80. *E.g.*, 47 U.S.C. § 201 (1982).

81. Notice of Proposed Rulemaking, 25 F.C.C. 2d 38, 39 (1970).

82. *See supra* note 14.

83. *See supra* note 67.

84. For a particularly disastrous attempt, *see* Botein, *Access to Cable Television*, 57 CORNELL L. REV. 419 (1972).

with non-commercial access requests, commercial access users receive short shrift, despite the absence of actual competition with a vertically integrated cable operator's programming.⁸⁵ Thus, unless IBN develops far more than an "economy of abundance," the prospects for creating a workable IBN access scheme are not particularly bright.

V. CONCLUSION

With IBNs or any other new technology, all regulatory bets are off. The cable television experience shows the unpredictability of media evolution. Nevertheless, a few general observations may be in order.

On a very simplistic level, common carrier status for IBNs appears to resolve all the policy problems.⁸⁶ Taking IBN operators out of the programming business removes their incentives to exclude or censor competitors. But the common carrier cure not only may be a bit too attractive, it also may ignore two critical concerns. First, even if IBNs lack natural monopoly characteristics, if owned by a common carrier, an IBN might be regulated as a monopoly. Second, common carrier treatment of IBNs may not remove all incentives to exclude competitors, particularly if an IBN's parent company has present or future interests in marketing content.

Regardless of whether or not IBNs should have carrier status and despite a lack of natural monopoly characteristics, IBNs probably will have sufficient market power to require some type of governmental oversight. If IBNs develop virtually unlimited bandwidth, the degree of governmental intrusion might be rather limited. Thus, IBNs might become the electronic equivalent of the pre-Revolutionary War press, which supported a number of competing newspapers. However, if IBNs fail to fulfill their technological promise, IBNs may face the same regulatory problems as the other electronic media. Thus, IBNs would require the creation of yet another new regulatory scheme.

85. Indeed, the 1984 Cable Act virtually institutionalizes a cable operator's ability to exclude its competitors by providing that a cable operator may set terms for third-party "leased access" which "assure that such use will not adversely affect the operation, financial condition, or market development of the cable system." 47 U.S.C. § 612(c)(1) (Supp. 1989).

86. Once again, common carrier status also was touted as the panacea for cable television. *See supra* note 5 and accompanying text. Whether it would have fulfilled its promise in what has become an intensely entrepreneurial industry is less than clear.