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**FIBEROPTIC NETWORK COMMUNICATIONS: A PRELIMINARY ANALYSIS OF
THEIR OWNERSHIP; Outside Counsel**

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Body

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THE IMPLEMENTATION of integrated broadband fiberoptic networks (IBN) is still far in the future; once developed, however, IBNs will be able to supply business and residential users with hundreds -- perhaps even thousands -- of television channels. It thus is necessary to analyze IBN's potential development now, in order to undertake effective policy planning. A major task in this process is defining IBN's fit with the present legal and regulatory regimes.

The advent of IBN raises a number of difficult -- and currently unanswerable -- structural questions. Which entities should be allowed to own IBNs? Should there be a limit on multiple ownership of IBNs? As with other policy issues, only tentative observations are possible now. This paper will make a rough cut at these and related issues. For obvious reasons, the analysis draws heavily upon traditional regulatory and antitrust principles.

The major actors are the Federal Communications Commission (FCC)¹ and the District Court for the District of Columbia (D.C. District Court).² This is not to downplay the importance of other legal and

regulatory issues. For example, an IBN operator's liability for defamation ultimately may impact significantly upon the IBN industry.

Different media call for different regulatory treatment. As the Supreme Court has stated so often, differences in the characteristics of new media justify differences in the First Amendment standards applied to them ...³ U.S. jurisprudence has created a variety of possible legal and regulatory statuses for the media. The two polar opposites are no regulation and common carrier regulation.

Treatment of IBN as a carrier answers a variety of other questions. On the one hand, regulating an entity as a common carrier largely defines its service obligations. Although the extent of regulation may vary, common carrier status implies offering adequate service to all paying customers at reasonable rates -- thus obviating many concerns as to concentration of control.

On the other hand, classification of IBN as a new type of regulatory animal requires creating a new legal regime -- an endeavour which is beginning to bring stability to cable television regulation only after two decades. This is not to suggest that IBN should be a carrier in order to avoid difficult legal decisions, but only that the initial regulatory classification is highly important.

IBN might require common carrier status for two radically different reasons. First, it might be a natural monopoly. Second, IBN might be part of a natural monopoly -- most likely, a local exchange carrier (LEC) such as a Bell Regional Holding Company (RHC) or a long-distance carrier. If the latter were the case, common carrier regulation might be necessary to prevent a parent company from subsidizing IBN out of monopoly revenues, or, conversely, from buying services from it at supracompetitive prices. The former situation would resemble AT&T's pre-divestiture subsidy of the Bell Operating Companies (BOCs) from long-distance revenues; the latter would be analogous to the BOCs' buying equipment at supracompetitive prices from AT&T's unregulated manufacturing arm, Western Electric (now AT&T-Technologies).⁴ The second scenario may end up requiring common carrier regulation of IBN, if only for political reasons; the public may not sit still for financing IBN from basic telephone revenues.

IBN systems thus seem likely to be regulated as common carriers, either because they have natural monopoly characteristics or because their parent companies do. If this is the case, the next question is the extent to which traditional common carrier policies must give way to IBN's characteristics.

Ownership Issues

Shaping an industry's structure generally is preferable to regulating its day-to-day business activities. Structural regulation is less confining for a firm, particularly in a rapidly developing field. It also involves less governmental intrusion -- a particularly significant consideration with a communications medium, which may implicate free speech values.

Structural regulation depends largely upon an industry's characteristics. The amount of firms and of competition in an industry is important, since the more atomistic an industry the less likely is monopoly or cartel behaviour. This consideration in turn highlights again the significance of IBN's natural monopoly characteristics. If only one firm can operate in a field, there naturally is more concern as to possible abuse.

For example, allowing cable operators to operate IBNs might create substantial incentives for self-dealing. If IBN were a natural monopoly, there would be real concerns about allowing cable operators to control it. But if a dozen IBNs operated side-by-side, there would be little reason to prevent cable operators from controlling one IBN. This approach might be somewhat similar to the FCC's regulation of cellular radio, which allocated one-half of the available spectrum in each location to local exchange carriers and the second half to other firm.⁵

IBN's lack of development makes it impossible to draw any conclusions as to potential industry structure. Nevertheless, it is important to consider a range of possibilities when weighing policy alternatives.

Ownership concerns will be less vital if IBNs do not offer their own services and do not control third parties' content. Strict separation of conduit and content theoretically should remove an IBN's incentive to interfere with a third party service provider, because the IBN would gain nothing. A common carrier approach thus might obviate the need for ownership restrictions

No Panacea

Common carrier regulation, however, may not be a panacea. On the one hand, the fact that a market can support only a single firm as a natural monopolist may justify a firm's acquisition of economic power.⁶ On the other, even if a firm does not benefit directly from hurting a non-competitive company, it may act coercively to help a parent or affiliated company. For example, some of the RHCs' most abusive tactics towards OCCs and cable operators took place during the tightly regulated era of the 1970's; although the RHCs' had little or nothing to gain, their parent company, AT&T, obviously did. Indeed, Judge Greene has noted that the RHCs' anti-competitive mindset may not have dissipated as a result of divestiture.⁷ Imposition of common carrier status thus may not rule out any chance of abuse, if an IBN's parent company has an incentive to injure a competitor.

Assuming that a common carrier approach does not resolve all problems, it may be useful to identify industries with incentives to exclude third parties from IBN. Firms often attempt to prevent entry even if they cannot provide a competitive service, in anticipation of being able to enter the market at some later date. The RHCs antipathy towards cable operators -- even after the FCC had prohibited RHCs from owning cable systems⁸ -- indicates that even long-term exclusion of competition may be an incentive for IBN operators.

Assessing potentially dangerous cross-ownership of IBN and other media assumes an understanding of IBN's product market, of course, which is rudimentary at this time. At least initially, IBN might provide video programming, such as high-definition television, pay-per-view, videoconferencing, and video telephony. Indeed, the only operational IBN-style facility is in Biarritz, France; it focuses largely on random access programming and videoconferencing.⁹ Present networks are probably capable -- particularly with the advent of ISDN -- of handling foreseeable voice and data transmission. (IBN thus might be competitive in the voice and data markets only for new installations; this factor presumably would slow IBN's entry into the voice and data markets. But if IBN ultimately were to offer primarily voice and data communication, the discussion below would be inapposite.)

With these assumptions in mind, it is possible to analyze existing firms' potential ownership of IBN. In the context of IBN -- as opposed to telephone -- the RHCs seem to have few incentives to interfere with third party services. An LEC by definition is a common carrier and subject to common carrier regulation, which

may help to prevent anti-competitive practices. More important, LECs have little or no experience in marketing video programming or other services -- and thus no existing services to protect. To be sure, the RHCs recently have attempted to move into the videotex and data base markets -- only to be rebuffed twice by Judge Greene.¹⁰

Different Scenario

This scenario would be quite different if LECs operated IBNs in partnership with non-carrier firms -- perhaps most likely, cable television operators. Even if the LEC provided only channel capacity and the cable operator handled all marketing, the LEC might have an incentive to maximize its partner's -- and therefore the partnership's -- revenues, unless the LEC had to serve all program providers on the same terms and conditions. If free to become partners with program providers, LECs presumably would form alliances with the highest bidders -- and thus acquire incentives to discriminate.

Whether IBN will develop into a major provider of data services, however, remains to be seen. If IBN primarily supplies video programming, the LECs would find themselves with comparatively little useful background -- and thus perhaps no incentive to provide content as opposed to carriage. (Once again, this assumes that LECs do not enter into partnerships with non-carrier entities, such as cable operators.) Entering the video programming market would put LECs into direct competition with broadcasters, cable operators, and motion picture studios -- all of which have substantially more expertise than the LECs in marketing video programming. But LECs have experience in the nuts and bolts aspects of making an IBN work -- installation, maintenance, billing, etc. An LEC thus might find that its real economies of scale and scope lay on the hardware, not the programming side. An LEC concentration on this part of the IBN industry would track the RHCs' recently unsuccessful request to Judge Greene to offer data base services.

Much the same reasoning would apply to AT&T and the other long-distance common carriers (OCCs); they too lack any experience with video programming, and thus any immediate incentive to suppress third party IBN users. As with the RHCs, this is not to say that history could not repeat itself -- particularly the history of the RHCs' suppressing cable development in the late 1960's and early 1970's. (AT&T's exclusionary practices then may have been motivated only secondarily by a long-term interest in entering

the cable television business; Its primary incentive seems to have been coercing cable operators into leasing facilities from the BOCs, rather than building their own plants.)¹¹

Neither the RHCs nor the long-distance carriers would have this incentive. Unless IBN ultimately has no natural monopoly characteristics and multiple systems are feasible, an IBN operator would have no need to force programmers to use its network; after all, its operation would be the only available. There might be a transitional period during which IBN gained and cable television lost market share. During this time, an IBN operator might have an incentive to poach subscribers from slowly declining cable systems -- another factor which argues strongly for telco/cable partnerships). Moreover, AT&T and the OCCs have substantial experience in operating switched networks in general and fiberoptics in particular; like the LECs, they may have economies of scale. Operation of IBNs by either the LECs or long-distance telephony providers thus seems to pose little danger of excluding competitors and the real potential for economies of scale.

Opposition Situation

The situation is almost exactly the opposite with video media -- particularly cable television. Cable operators already provide video programming, and presumably would compete head-on IBN -- despite being saddled with low-bandwidth coaxial cable systems. Moreover, cable operators increasingly are 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 satellite earth station owners. The cable industry might view IBN as potentially destructive competition, and thus try either to kill or control it.

If the cable industry dominated IBN, it would have an incentive to exclude third party program suppliers. Cable operators have waged a largely successful battle to keep third parties off their systems, and the rather vague leased access provisions of the 1984 Cable Act provide little relief.¹² Moreover, the cable industry has no experience with either switched networks or fiberoptics; U.S. cable systems use tree and branch architectures, unlike central offices in telephony; cable operators use fiber only to a very limited extent -- such as carrying signals from receiving antennas to a head-end. Although a few U.S. cable operators have experimented with quasi-switched systems, none seems ready to adopt it.

Cable operators thus have every reason to exclude third parties from IBNs, and very little relevant operational experience. This situation has some irony to it, since it is a mirror image of the telephone industry's attempts to kill or control cable television two decades ago. Since then, cable may have grown strong enough to use the same strategy on IBN -- just as it has done with satellite receivers.

Exclusion from IBN ownership might not sound the death knell for the cable industry. IBN will develop slowly and expensively; for a long period of time, cable and IBN may operate side by side -- particularly since cable's fixed costs initially would be much lower than IBN's. Moreover, 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 television networks and broadcasters. Like cable operators, their sale of video programming -- indirectly through the sale of advertising -- gives them an incentive to exclude third parties; and though not as vertically integrated as some cable operators, the networks also have strong ties to program producers. Conversely, neither networks nor broadcasters have any experience in operating telecommunications facilities or in working with fiberoptics. They thus seem to have potentially dangerous cross interests and no economies of scale.

Changes Forecast

In the long run, the television networks might be irrelevant, since they may have folded by the time that IBN arrives. Cable's recent expansion has led many to predict that all communications will move from over-the-air transmission to cable or fiberoptics by the end of the century. Under this approach, the networks might change from distributors to program packagers. But even as such, they still would have an incentive to exclude competing programmers from IBN. (Another consequence of such a development -- beyond the scope of this paper -- is the effect on people who cannot afford IBN service; this problem is just another side of the universal service issue.)

In terms of cross-ownership policies, LECs and long-distance carriers thus seem to be the most appropriate entities to operate IBNs; they not only have comparatively few conflicts of interest with IBN

users, but also have economies of scale. Moreover, they probably are better positioned than other media -- with the possible exception of cable -- to generate the necessary capital.

This discussion of cross-ownership has not considered other types of ownership restrictions. At least three other types of limitations seem possible: alien ownership; vertical integration; and common ownership.

The Communications Act prohibits aliens from owning more than 20 percent directly (or 25 percent through a holding company) of any broadcast or common carrier ... license ...¹³ The reasons behind the statute are less than clear; unlike similar prohibitions in Europe, they are not based on concerns about cultural imperialism. Instead, they seem to stem from early fears that hostile countries would use U.S. radio stations to transmit either propaganda or defense information. Because cable television is particularly unsuited for either of these purposes, the FCC did not impose alien ownership restrictions upon it.¹⁴ The same logic would apply to IBN, since an IBN operator is likely to have even less control than a cable operator over its system. Moreover, foreign investment may help Implement a capital-intensive enterprise such as IBN. Canadian firms have made significant investments in the U.S. cable Industry. Given some countries' -- e.g., Japan's and France's -- intense interest in entering the fiberoptic market, investment in a U.S. IBN system might be an attractive means of forging commercial alliances and encouraging reciprocal dealing.

Common Ownership

A second question is whether one entity should be allowed to own both local and long-distance IBN facilities. The reasoning behind the AT&T divestiture was to prevent an RHC's discriminating in favor of AT&T and against the OCCs. But these policy considerations may not apply to IBN. Natural monopoly characteristics traditionally have been stronger for local than for long-distance telephone networks, because of the high sunk costs of central office facilities. This may not be the case with IBN, however, given the potentially huge bandwidth -- as well as cost -- of long-distance fiberoptic networks. If so, ownership of local and long-distance transmission facilities would create no danger of exclusionary tactics; there would be no potential competition to exclude. Nevertheless it might be advisable for

different firms to provide local and long-distance service, solely to increase the number of players in the IBN game; this arguably might lead to better R&D and the like.¹⁵

Finally, it might be advisable to limit the number of local IBNs which a single entity could own. One analogy here would be the FCC's multiple ownership rules, which restrict a firm to 12 AM, FM, and TV stations or 25 percent of the U.S. audience.¹⁶ Whether a common carrier or not, however, IBN is likely to be more passive in terms of program content control than broadcasting. The FCC has refused to impose multiple ownership limitations on cable, which probably is less passive than IBN will be.¹⁷ This rationale would militate against imposing multiple ownership rules on IBN. But if IBN ultimately became the sole means for receiving video programming and were not a common carrier, traditional diversity principles would argue in favor of common ownership limitations; in effect IBN would be treated as an essential facility or bottleneck.

Conclusion

Common carriage does not appear to be a cure for IBN's potentially anticompetitive practices. Ownership restrictions therefore will be necessary. In a bit of a **volte face**, telephone carriers probably should be allowed to operate IBNs and video media should not be.

1. 47 USC 151 et. seq. (1982).
2. 15 USC 1 et. seq. (1992). **United States v. American Tel & Tel. Co.**, 552 F. Supp. 131 (DDC 1982). aff'd sub nom. **Maryland v. United States**, 460 U.S. 1001 (1983) [hereinafter AT&T, 552 F. Supp. 131.].
3. **Red Lion Broadcasting Co. Inc. v. FCC**, 395 U.S. 367, 386-387 (1969). quoting **Joseph Burstyn Inc. v. Wilson**, 343 U.S. 495, 503 (1948).
4. Charles F. Phillips Jr., *The Regulation of Public Utilities* 621-644 (1984).
5. **Cellular Communications Systems**, 86 FCC 2d 469 (1981), **recon.** 89 FCC 2d 58, **recon.** 90 FCC 2d 571 (1982).

6. E.g., **Official Airline Guides Inc. v. FTC**, 630 F2d 920 (2d Cir. 1980), certiorari denied 450 U.S. 917 (1981).
7. **United States v. Western Electric Company Inc.**, 673 F. Supp. 525, 532-535 (DDC 1987) [hereinafter Western Electric 1987).
8. **General Telephone of the Southwest v. FCC**, 449 F2d 846 (5th Cir. 1971).
9. Francois Gerin, **The Blarritz Fiberoptic System, Cable TV Law & Finance**. May 1986, at 1.
10. Western Electric 1987 at 587 et. seq.; see also **United States v. Western Electric Co. Inc.**, Civil No. 82-G192 (DCDC. June 13, 1989).
11. E.g., California Water & Telephone Co., 13 FCC 2d 440 (1967).
12. Michael Botein & David M. Rice, The Ambivalent Nature of the Cable Communications Policy Act of 1984: An Analysis, **New York Law Journal**, March 22, 1985.
13. 47 USC 310(b) (1982).
14. **Report and Order**, 59 FCC 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.
15. For example, total combined funding of R&D by AT&T and the RHCs increased after divestiture. Michael Noll, Bell System R&D Activities: The Impact of Divestiture, Telecommunications Policy, June 1987, at 181.
16. 47 CFR 73.636 (1988).
17. **Report and Order**. 52 P&F Rad. Reg. 2d 257 (1982).

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