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CABLE-SATELLITE NETWORKS: STRUCTURES AND PROBLEMS†

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Unlike the broadcast television industry, in which programming is dominated by three giant networks, the cable television industry is quite fragmented. Most cable television systems are small operations, and although a few large cable organizations own numerous systems, the individual cable systems they operate typically are dispersed over wide geographic areas and are not interconnected. Thus, compared to television broadcast stations, which, even if not affiliated with a network, generally reach large viewing audiences, cable systems constitute small economic units.¹ The programming "originated" by cable systems—that is, programming not obtained from television broadcasts—reflects the industry's economic structure. Small cable systems are not able individually to procure programming with the same mass appeal as that of broadcast networks or individual broadcast stations, so originations presently are locally oriented and seldom sophisticated.²

† This article was prepared and submitted in March 1975 in connection with the symposium on cable communications law held by the *Catholic University Law Review*. While there has been much activity in the cable-satellite field since that time, the article does note the most significant recent developments.

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1. The Federal Communications Commission, in April 1973, released a breakdown of cable systems indicating that of the more than 5,000 cable systems serving communities throughout the United States, only 65 (1.3 percent) had more than 10,000 subscribers and only 228 (4.6 percent) served more than 5,000 subscribers. FCC Public Notice No. 00460 (Apr. 26, 1973).

2. BROADCASTING, Vol. 88, No. 4, Jan. 27, 1975, at 14. To the extent that cable origination depends on advertising support, *see id.*, programming presented on origination channels must have mass appeal: the value of an advertisement to the business placing the ad is dependent in part on the number of persons the ad will reach, and that in turn governs the type of programming that will be successful. *See Comment, Regulation of Pay-Cable and Closed Circuit Movies: No Room in the Wasteland,*

One frequently discussed means by which cable systems could upgrade the quality of their originations is by pooling numerous systems' resources. If a large enough number of systems collaborated on the production or procurement of origination programming, their joint audience and joint resources may be sufficient to support programming of a much higher quality than most programming originated presently. The possibility of cable networking has been discussed by the Federal Communications Commission (hereinafter "FCC" or "Commission")³ and broadcasters⁴ as well as cable enthusiasts.⁵ To date, attempts at cable networking have been limited, due largely to the costs of interconnecting cable systems.⁶

40 U. CHI. L. REV. 600, 610-11 (1973); Posner, *The Appropriate Scope of Regulation in the Cable Television Industry*, 3 BELL J. ECON. & MGT. SCI. 98, 103 (1972); Telser, *Supply and Demand for Advertising Messages*, 56 AMER. ECON. REV. 457, 459 (1966). While observers, both within the cable television industry and without, have speculated on cable television's ability to profit from reaching small target audiences with specialized programming, such programming is not likely to be profitable unless cable operators are able to impose direct charges on the specially interested viewers. The Federal Communications Commission, however, has imposed significant restrictions on cablecasting of programs paid for by a per-channel or per-program charge. See 47 C.F.R. § 76.225(a) (1975). Although ostensibly aimed at mass appeal programming, these restrictions have deterred extensive pay-cablecasting of any type.

3. See, e.g., Second Report and Order on Domestic Communications-Satellite Facilities, 35 F.C.C.2d 844, 855 (1972); First Report and Order on CATV Rules, 20 F.C.C.2d 201, 203 (1969).

4. See, e.g., Further Comments of CBS in F.C.C. Docket No. 19554, filed Sept. 24, 1974.

5. See, e.g., BROADCASTING, *supra* note 2, at 14, 26, 68; NATIONAL CABLE TELEVISION ASSOCIATION (NCTA), OFFICIAL TRANSCRIPT 18TH ANNUAL NCTA CONVENTION, 668-705 (1969).

6. BROADCASTING, *supra* note 2, at 14. Other major costs to cable networking are program acquisition and administrative costs. If an efficient interconnection scheme is adopted, both interconnection costs and administrative costs could decline. In addition to making a greater portion of network-derived revenues available for program acquisition, increased interconnection efficiency should make participation in the network profitable for some cable systems that would not participate in a network using more costly means of interconnection, thus increasing system participation and, hence, total revenues.

Networking efforts to date have depended largely on "bicycling" of tapes (program distribution by mail, messenger or other nonelectronic means). Programming distributed in this manner, of course, cannot be shown "live." At least one developing network, however, uses microwave interconnection and shows sporting events live in a five-state area. BROADCASTING, *supra* note 2, at 14. In addition to this venture, known as Target Network Television, pay-television networks are being developed by Home Box Office, Inc., and Optical Systems Corporation. See BROADCASTING, Vol. 86, No. 12, Mar. 25, 1974, at 72; Comments of Time, Inc., Home Box Office, Inc., & Manhattan Cable T.V., Inc., in F.C.C. Docket No. 19554, filed Sept. 24, 1974; Comments of Optical Systems Corp. in F.C.C. Docket No. 19554, filed Nov. 1, 1972. How these infant networks will fare and to what extent they will shift to satellite interconnection remains to be seen. One network, Home Box Office, recently announced plans for using satellites to distribute some, but not all, of its programming to various cable systems. BROADCASTING,

This obstacle to the development of a cable television network appears to be much smaller now than at any time in the past. With the development of domestic communications satellites, interconnection of cable systems might be effected at a cost between 50 and 80 percent less than terrestrial means of interconnection.⁷ This article, after briefly detailing the development of domestic satellites and of cable originations, explores the possible structures that cable-satellite networks might take. Development of such a network or networks, while solving a major problem that has impeded improvement of cable originations, raises significant possible communications law and antitrust problems. These problems are discussed in light of the probable structure of cable networks.

I. THE COMPONENTS: SATELLITES, ORIGINATIONS AND NETWORKING

A. *Satellite Development: Birds Early and Late*

Satellites offer great promise for the type of transmissions necessary for the operation of any television network, whether the programs are distributed ultimately by broadcast of signals over-the-air or by coaxial cable.⁸ Like terrestrial systems, satellites have the capability for transmitting signals from one point simultaneously to many points;⁹ unlike terrestrial systems, the cost of satellite transmission is not a direct function of the distance over which a signal is transmitted.¹⁰ For point-to-multipoint transmission over great distances, then, satellites should be more economical than terrestrial systems, at least as to the costs of transmission.¹¹ For persons contemplating

Vol. 88, No. 16, Apr. 21, 1975, at 16-18. See text at note 69 *infra*. See also BROADCASTING, Vol. 88, No. 22, June 2, 1975, at 25-26.

7. BROADCASTING, *supra* note 2, at 26 (50 percent savings); NCTA, *supra* note 5, at 682-83, 691 (80 percent savings); R. NOLL, M. PECK & J. MCGOWAN, ECONOMIC ASPECTS OF TELEVISION REGULATION 246-50 (1973) [hereinafter cited as R. NOLL] (approximately 50 percent savings).

8. See Proposed Second Report and Order on Domestic Communications-Satellite Facilities, 34 F.C.C.2d 9, 25-26 (1972). Authorized domestic satellite carriers American Satellite Corp., Western Union, and RCA Globcom recently sought to intervene in the Commission's inquiry regarding American Telephone & Telegraph Company's program transmission service. In their petition, the satellite carriers indicated that they shortly would have operational capability to provide television program transmission service. See TELECOMMUNICATIONS REP., Vol. 40, No. 47, Nov. 25, 1974, at 36.

9. See NCTA, *supra* note 5, at 700.

10. Proposed Second Report and Order on Domestic Communications-Satellite Facilities, *supra* note 8, at 101; R. NOLL, *supra* note 7, at 251. Unlike microwave transmission, which requires facilities to amplify and relay signals at relatively frequent intervals (for instance, 100 repeater relays would be required between New York and Los Angeles), satellite transmission over long distances can be accomplished through the use of a single repeater relay mechanism. NCTA, *supra* note 5, at 700.

11. BROADCASTING, *supra* note 2, at 26; R. NOLL, *supra* note 7, at 249-52; M. SEIDEN,

construction of satellite systems, however, the relevant comparison is not between the costs of using existing satellite or existing terrestrial facilities; satellite systems will be constructed only if fully-distributed costs of satellite transmission are less than the marginal cost of transmission by terrestrial facilities (including current salvage value of those facilities).¹² Fully distributed costs of satellite transmission of course must include the expenses incurred in building and launching the satellite and in constructing and maintaining ground facilities.

Over the course of American satellite development, the costs (per communications channel) associated with satellite and earth station construction and maintenance have declined steadily.¹³ The American communications satellite industry has concentrated on the development of satellites that remain stationary with respect to points on the earth's surface.¹⁴ Such geostationary, or synchronous, satellites are launched to a high altitude and can receive signals from and transmit them to earth stations scattered over large areas.¹⁵ Also, since the satellite maintains a fixed position in relation to points on the earth's surface, no elaborate tracking equipment is required at stations seeking to receive its signals.¹⁶ Another element in reducing the costs of

CABLE TELEVISION U.S.A.: AN ANALYSIS OF GOVERNMENT POLICY 134-41 (1972). The transmission costs referred to are exclusive of sunk costs. "Sunk costs" are costs that have been incurred prior to a given time and will not be increased or decreased by decisions after that time. For a discussion of the relevance of sunk costs to pricing decisions, see Posner, *Natural Monopoly and Its Regulation*, 21 STAN. L. REV. 548, 581-82 (1969).

12. See A. KAHN, 1 THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS 73 (1971).

13. See NCTA, *supra* note 5, at 697; R. NOLL, *supra* note 7, at 246; see also PRESIDENT'S TASK FORCE ON COMMUNICATIONS POLICY, FINAL REPORT (1968).

14. The two basic types of satellites are synchronous (geostationary) and nonsynchronous. Synchronous satellites are placed in equatorial orbit at an altitude of 22,300 miles above the earth's surface. Their orbit is completed in approximately the same amount of time as the earth's daily revolution, and thus they appear to remain stationary. Nonsynchronous satellites may either have controlled or random orbits. Only the latter type of nonsynchronous satellite is presently in use. For more detailed discussion of satellite technology, see A. CHAYES, J. FAWCETT, M. ITO & A. KISS, SATELLITE BROADCASTING 1-16 (1973); TWENTIETH CENTURY FUND TASK FORCE, COMMUNICATING BY SATELLITE 13-33 (1969).

15. See A. CHAYES, *supra* note 14, at 1; TWENTIETH CENTURY FUND TASK FORCE, *supra* note 14, at 31.

16. A. KAHN, 2 THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS 136 (1971); TWENTIETH CENTURY FUND TASK FORCE, *supra* note 14, at 31-32. Another factor in reducing earth station costs is the use of focused beams to increase the strength of the signal being received at the earth station (while reducing energy loss to space, a focused beam could cover up to one-third of the earth's surface). See A. CHAYES, *supra* note 14, at 5. The cost of one earth station to receive signals from a synchronous satellite

satellite communications has been the presence of economies of scale: the larger the satellite, at least within the limits of present launch capabilities, the lower the cost per communications channel.¹⁷ The first international commercial communications satellite, dubbed Early Bird or Intelsat I, was placed in orbit by the National Aeronautics and Space Administration (NASA) and the Communications Satellite Corporation (COMSAT) in 1965;¹⁸ it weighed a mere 85 pounds¹⁹ and had a capacity for 240 voice-communications circuits.²⁰ Within four years, communications satellites quadrupled in size²¹ and their communications circuit capacity increased by 25 times.²² Applications submitted to the FCC in 1972 proposed satellites having as much as 3,000 times the circuit capacity of Early Bird.²³

While technological developments have rapidly increased the attractiveness of satellites for program transmission, the administrative development of domestic satellites has proceeded more slowly. The first American experimental communications satellite was launched in 1958,²⁴ but there was no significant pressure for authorization of domestic satellites until passage of the Communications Satellite Act of 1962.²⁵ In September 1965, the same year that COMSAT and NASA put Early Bird in orbit, the FCC received an application from the American Broadcasting Companies for authority to operate a domestic communications satellite.²⁶ The Commission studied the possible uses of satellites and the possible structure of a domestic communications satellite industry for four years before deciding that it had authority to license domestic satellite operations.²⁷ Then, the Commission asked for

is estimated to be in the \$100,000 to \$150,000 range, Proposed Second Report and Order on Domestic Communications-Satellite Facilities, *supra* note 8, at 22-23, although mass production might lower these costs significantly. It is not clear to what extent the lower earth station costs associated with synchronous satellites are offset by increased launch costs. See TWENTIETH CENTURY FUND TASK FORCE, *supra* note 14, at 31-32.

17. See NCTA, *supra* note 5, at 693-97; R. NOLL, *supra* note 7, at 246.

18. See NCTA, *supra* note 5, at 693; M. SEIDEN, *supra* note 11, at 133-34; TWENTIETH CENTURY FUND TASK FORCE, *supra* note 14, at 32-33.

19. NCTA, *supra* note 5, at 693.

20. TWENTIETH CENTURY FUND TASK FORCE, *supra* note 14, at 32-33.

21. NCTA, *supra* note 5, at 693-94.

22. TWENTIETH CENTURY FUND TASK FORCE, *supra* note 14, at 32-33.

23. Proposed Second Report and Order on Domestic Communications-Satellite Facilities, *supra* note 8, at 14-21. This calculation is based on the projection that a single transponder "is capable of handling . . . one color television channel, or 600-900 or more voice circuits." *Id.* at 29 n.36. We have used the more consecutive 600 voice circuit-per-transponder figure.

24. See M. SEIDEN, *supra* note 11, at 133.

25. 47 U.S.C. §§ 701-44 (1970).

26. See First Report and Order on Domestic Communication-Satellite Facilities, 22 F.C.C.2d 86, 108 (1970); M. SEIDEN, *supra* note 11, at 134.

27. See First Report and Order on Domestic Communication-Satellite Facilities, *supra*

applications from entities seeking to own or operate satellites or earth stations.²⁸ The Commission reviewed the applications with an eye toward structuring a domestic communications satellite industry along three possible lines: allowing totally unrestricted entry; permitting multiple entry but screening each applicant to ensure that the particular applicant's entry into this field would have no untoward consequences on satellite or other communications; or creating, initially or permanently, a monopoly service.²⁹ Two more years passed before the Commission decided that it would not foreclose entry into the domestic satellite field to any of the applicants on policy grounds but instead would pass on each applicant individually.³⁰ No applications for satellite systems were granted until 1973,³¹ seven years after the FCC began its domestic satellite inquiry. At this writing, six applications have been granted,³² and only one company, Western Union, has domestic communications satellites in operation.³³

B. Origination

Origination, of course, is not the main stock-in-trade of cable television systems. Cable television service originally was developed to bring improved reception of broadcast television signals to people in small towns and rural areas reached by few or no broadcast signals and to areas where terrain

note 26, at 128-33. The Notice of Inquiry in this matter was issued by the FCC on March 2, 1966, 31 Fed. Reg. 3507 (1966), and the first Report and Order was adopted on March 20, 1970.

28. First Report and Order on Domestic Communication-Satellite Facilities, *supra* note 26, at 88-104.

29. See Proposed Second Report and Order on Domestic Communications-Satellite Facilities, *supra* note 8, at 28.

30. Second Report and Order on Domestic Communications-Satellite Facilities, *supra* note 3, at 851.

31. The first grant of a permit to construct a satellite system was made January 4, 1973, to Western Union. FCC Common Carrier Action, Public Notice No. 1000 (Jan. 4, 1973).

32. Five other applications were granted in September 1973. See FCC Common Carrier Action, Public Notice No. 1270 (Sept. 13, 1973).

33. Western Union was authorized in April 1974 to launch its first domestic satellite, FCC Common Carrier Action, Public Notice No. 1456 (Apr. 4, 1974) and in June 1974 to launch its second, FCC Common Carrier Action, Public Notice No. 1518 (June 7, 1974). (Separate authorizations are needed to construct and to launch domestic communications satellites). At this writing, two other carriers, RCA Globcom and American Satellite Corporation, lease satellite space: RCA on Canadian satellites and AmSat on Western Union's. They use that space to provide some communications common carrier services to domestic communications users. See RCA Globcom, 42 F.C.C.2d 774 (1973). The FCC recently directed RCA to shift its traffic from the Canadian satellites to a Western Union satellite until RCA's own satellite facilities are operational. See TELECOMMUNICATIONS REP., Vol. 40, Nos. 51-52, Dec. 23, 1974, at 6-7.

interfered with broadcast reception.³⁴ As cable's horizons expanded to areas where several broadcast signals were received, but more and different signals were desired,³⁵ origination also was offered to attract new customers. Originations at first were comprised of automated weather reports, stock market quotations, and UPI or AP news tickers.³⁶ By 1970, between five and ten percent of cable systems offered some live local programming, generally consisting of religious shows, summaries of local news, or coverage of local events.³⁷

With the expansion of cable systems into markets already served by several broadcast stations, the FCC, after initially declining in 1959 to exercise jurisdiction,³⁸ reversed itself in 1965 and since that time has asserted increasing regulatory authority over cable.³⁹ By 1968, the Commission had formulated its policy for regulating cable originations, seeking both to prevent cable from harming the established broadcast television business and to promote cable as a means of providing programming, especially local programming, not seen on broadcast television.⁴⁰ Faced with the conflicting desires of broadcasters, who sought a ban on cable "originations of the entertainment type,"⁴¹ and cable interests, which sought freedom to originate or not as they chose, the FCC adopted a rule requiring origination by any cable system with 3,500 or more subscribers.⁴² After the Supreme Court

34. Smith, *The Wired Nation*, 210 THE NATION 582, 582-83 (1970).

35. For discussion of the development of cable television and the assertion of FCC jurisdiction over it, see Comment, *CATV Regulation—A Complex Problem of Regulatory Jurisdiction*, 9 B.C. IND. & COM. L. REV. 429 (1968); Comment, *supra* note 2, at 604-06; Note, *Regulation of Community Antenna Television*, 70 COLUM. L. REV. 837 (1970); Witt, *CATV and Local Regulation*, 5 CAL. WESTERN L. REV. 30 (1968).

36. Smith, *supra* note 34, at 584-85.

37. *Id.*

38. See *Inquiry Into CATV and Repeater Services*, 26 F.C.C. 403, 427-31 (1959).

39. See, e.g., *First Report and Order on Microwave-Served CATV*, 38 F.C.C. 683, 707-14 (1965); *Second Report and Order on CATV*, 2 F.C.C.2d 725 (1966); *First Report and Order on CATV Rules*, *supra* note 3. See also authorities cited at note 35 *supra*; Chazen & Ross, *Federal Regulation of Cable Television: The Visible Hand*, 83 HARV. L. REV. 1820, 1825 (1970).

40. See *CATV, Notice of Proposed Rulemaking and Notice of Inquiry*, 15 F.C.C.2d 417, 421-24 (1968). See also *First Report and Order on CATV Rules*, *supra* note 3, at 203-04.

41. *Id.* at 203.

42. *Id.*; 47 C.F.R. § 74.1111 (1970); 47 C.F.R. § 76.201(a) (1972). The Commission's order requiring origination placed significant constraints on the operation of origination channels. The Commission limited the placement of commercials to "natural breaks" in the originated program. 47 C.F.R. § 74.1117 (1970); 47 C.F.R. § 76.217 (1972). Subsequently, the FCC imposed numerous restrictions on presentation of origination programming for a per-program or per-channel fee. 47 C.F.R. § 74.1121 (1970); 47 C.F.R. § 76.225 (1972).

upheld the mandatory origination rule,⁴³ the Commission decided that the rule did not serve its intended purpose and abandoned it.⁴⁴

Despite the present lack of FCC compulsion, numerous cable systems originate. The current figures show that somewhere over 600 systems originate,⁴⁵ and the National Cable Television Association (NCTA) states that 22 percent of all cable systems, serving more than four-and-one-half million subscribers (57 percent of total cable subscribers), originate.⁴⁶ While many systems originate, few do so successfully. NCTA estimates that cable originations reach only one or two percent of their potential television audience.⁴⁷ This poor showing is attributable to the small financial base with which most cable systems must work.⁴⁸ Most cable systems are economically limited to presentation of locally-oriented programming,⁴⁹ although past experience with origination indicates that, with a few exceptions, "syndication-like programs or entertainment packages . . . rather than local, community-oriented originations" are most likely to be successful.⁵⁰

C. Cable Networking

Faced with the marginal nature of cable originations, efforts have been made to form regional or national networks to provide a number of cable systems with origination programming.⁵¹ Many of these ventures have failed, only to have new networking proposals supplant them.⁵² Increasingly, plans for cable networking focus on satellites as the basic means for program

43. *United States v. Midwest Video Corp.*, 406 U.S. 649 (1972). The Supreme Court's decision reversed a decision of the United States Court of Appeals for the Eighth Circuit invalidating the mandatory origination rule. *Midwest Video Corp. v. United States*, 441 F.2d 1322 (8th Cir. 1971). Following the Eighth Circuit decision, the FCC had stayed enforcement of the rule. 36 Fed. Reg. 10876 (1971). The Commission's stay of the rule remained in effect until November 1974, when the FCC adopted its order deleting the rule. See note 44 *infra*.

44. Report and Order on Cable Television Service, 49 F.C.C.2d 1090 (1974). While the mandatory origination rule was repealed, the FCC does require cable systems serving 3,500 or more subscribers to make available a channel and certain facilities for local production and presentation of cablecast programs; the new rule requires stations to afford access for origination but does not require cable systems themselves to originate programming.

45. *Id.* at 1093; BROADCASTING, *supra* note 2, at 14.

46. See Report and Order on Cable Television Service, *supra* note 44, at 1093.

47. See *id.*

48. See First Report and Order on CATV Rules, *supra* note 3, at 203; Smith, *supra* note 34, at 591-94.

49. Report and Order on Cable Television Service, *supra* note 44, at 1093-94; BROADCASTING, *supra* note 2, at 14.

50. See Report and Order on Cable Television Service, *supra* note 44, at 1095.

51. BROADCASTING, *supra* note 2, at 14; see note 6 *supra*.

52. See BROADCASTING, *supra* note 2, at 14; text at notes 54-56 *infra*.

transmission. Plans for a cable-satellite network were spurred by broadcasters' interest in using satellite transmission to reduce interconnection costs.⁵³

In 1969, participants in the NCTA Convention discussed a proposal for a nationwide cable origination network using satellite transmission to interconnect 36 centers from which microwave relays would distribute signals to participating cable systems.⁵⁴ The network was to have a variety of channels providing general educational, instructional, weather, medical and congressional programming plus one channel for selected replays of off-network programs.⁵⁵ Another possible network is under consideration by the Public Service Satellite Consortium (PSSC); it would include transmitting public television programs and educational and health-related programming via satellite to cable systems for distribution to various schools, colleges, and public television stations.⁵⁶ Although its future is unclear, there is an experiment similar to PSSC's planned network that is presently operating in a four-state area in the Rocky Mountains. Under the aegis of the Department of Health, Education and Welfare, with the cooperation of NASA, a satellite is being used to beam educational programming to cable systems, schools and public television stations.⁵⁷ Noticeably absent from the Rocky Mountain experiment and these NCTA and PSSC proposals is any new entertainment programming, the fare that many cable operators feel is essential to successful origination.⁵⁸

Whether the NCTA and PSSC proposals are put into operation or not, it is possible that a number of cable systems would attempt to use satellite transmission to distribute entertainment programming for origination.⁵⁹ Several cable companies already have formed an organization, the Cable Satellite Access Entity (CSAE), to evaluate the possibility of creating a cable-satellite origination network.⁶⁰ A report to CSAE from an independent

53. The initial calculation, advanced by ABC and the Ford Foundation in 1966, of savings of up to 50 percent over AT&T land line transmission charges was confirmed by a presidential task force in 1969. PRESIDENT'S TASK FORCE ON COMMUNICATIONS POLICY, *supra* note 13, noted in R. NOLL, *supra* note 7, at 246. More recently, Television News, Inc. (TVN), a company providing news feeds to television stations, announced plans to switch from AT&T land transmission to satellite transmission in July 1975. TVN projects a 50 percent savings in transmission costs. BROADCASTING, *supra* note 2, at 26.

54. NCTA, *supra* note 5, at 668-72, 699-705.

55. *Id.* at 670-76.

56. BROADCASTING, Vol. 88, No. 2, Jan. 13, 1975, at 32.

57. See TV COMMUNICATIONS, Feb. 1975, at 14-24.

58. See Report and Order on Cable Television Service, *supra* note 44, at 1095.

59. A variety of applicants for satellite facilities have proposed use of satellite transmission for cable programming, see Proposed Second Report and Order on Domestic Communications-Satellite Facilities, *supra* note 8, at 14-21, and a number of cable systems have applied for earth station facilities to receive such programming. *Id.* at 22.

60. See TELEVISION DIGEST, Vol. 14, No. 2, Jan. 14, 1974, at 5; TELEVISION DIGEST, Vol. 14, No. 33, Aug. 19, 1974, at 4.

company commissioned to assess the network's feasibility concluded that a variety of programming, including entertainment programming, profitably could be obtained and distributed to cable systems via satellite.⁶¹ The report suggested, however, that additional market research and program testing be undertaken before CSAE makes its final decision on the network.⁶² Assuming that such additional study supports the feasibility of using satellites to transmit cable origination programming, the cable-satellite hook-up could be structured along several lines.

First, one cable company or a combination of companies could put up a satellite of its own. Hughes Aircraft Company, which has substantial interests in cable systems,⁶³ has proposed placing two satellites in orbit.⁶⁴ Hughes proposed to offer a program distribution service to cable systems, with set fees charged each subscribing system.⁶⁵ Other cable interests are unlikely to duplicate the Hughes proposal. It is improbable, at least in the near future, that cable systems would have full-time demand for a satellite of their own,⁶⁶ and, consequently, they would have to depend on other users to fill most of the excess transponder capacity—Hughes, for instance, contracted with General Telephone and Electronics for the latter company to lease two-thirds of its satellite transponder capacity.⁶⁷ At this writing, the Hughes-

61. TELEVISION DIGEST, Vol. 14, No. 34, Aug. 26, 1974, at 5; TELEVISION DIGEST, Vol. 14, No. 35, Sept. 2, 1974, at 2.

62. TELEVISION DIGEST, Vol. 14, No. 35, Sept. 2, 1974, at 2.

63. See Proposed Second Report and Order on Domestic Communications-Satellite Facilities, *supra* note 8, at 45-46 regarding concern with vertical integration of Hughes' interests.

64. *Id.* at 14-15. Hughes' contemplated system would have two 12-transponder synchronous satellites in orbit, and East Coast and West Coast transmitting stations connected by terrestrial microwave to operation centers that would organize, format and edit program material. See Proposal of Hughes Aircraft Co. in FCC Docket No. 16495, filed Dec. 21, 1970.

65. *Id.* Anticipated monthly revenues from such fees would be between \$.25 and \$1.00 per subscriber to participating cable systems.

66. Cf. M. SEIDEN, *supra* note 11, at 137. Television network use of interconnection presently requires few continuously available channels for other than peak use, and peak demand lasts only a few hours each day. Even in peak use periods, such as late afternoon and early evening hours when networks assemble news shows, the broadcast television networks each might need only three satellite channels. See generally R. NOLL, *supra* note 7, at 247-49. Assuming development of taping facilities for cable systems, one dedicated satellite transponder might well suffice for cable networking, and even with very extensive cable network penetration a cable network would be most unlikely to fill more than one-third of a satellite's transponder capacity (taking even the smallest proposed domestic satellite, which would have 12 transponders; other satellites may have as many as 120).

67. See Proposed Second Report and Order on Domestic Communications-Satellite Facilities, *supra* note 8, at 14-15; Proposal of Hughes Aircraft Co., *supra* note 64, at 5; Proposal of General Tel. & Elec. Co. in FCC Docket No. 16495, filed Dec. 21, 1970.

GTE lease agreement has expired, and if GTE obtains use of another satellite for its transmissions, it is doubtful that Hughes would proceed with its system.⁶⁸

Second, one cable company or program producer might lease a transponder and attempt to use its entire capacity by selling programs to other cable systems and possibly also to television broadcast stations, particularly non-network stations.

Third, a single cable company could lease a satellite transponder. Since it is unlikely that any one cable company would have full-time need for even one transponder in the near future, the company would attempt to sub-lease or share the excess capacity with other cable or noncable entities. An alternative formulation of this third possibility is that a program producer (or a "distributor" who obtains programming from producers and distributes it to cable systems) could lease a dedicated transponder, use some of its capacity to transmit cable programming, and attempt to lease the excess transponder capacity to other entities.⁶⁹

Finally, several cable companies might form a joint venture to lease a transponder and provide programming jointly to the several cable systems.⁷⁰

68. See FCC Public Notice No. 9891 (Sept. 27, 1974); TELECOMMUNICATIONS REP., Vol. 39, No. 13, Apr. 2, 1973, at 13.

69. Quite recently, one pay cable program distributor announced plans to distribute 70 hours of programming per week to other cable systems using satellite distribution. BROADCASTING, Vol. 88, No. 16, Apr. 21, 1975, at 16-18. As this cable-satellite network evolves, it may move toward full-time lease of a transponder and take on any of the last three structures.

70. A joint operation could be pursued through formation of an association or a joint stock company that would be charged with program acquisition and distribution, along with associated networking responsibilities. The parent cable companies could continue to function individually as to all nonorigination aspects of cable operation, and presumably also would continue to compete for franchises. Program distribution via satellite could be accomplished by transmitting to earth stations at each participating cable system, or program transmission could be effected by satellite to a number of regional receiving stations located so that several cable systems in the surrounding area could be reached inexpensively by terrestrial microwave relay from the regional receiving station. As the total number of receiving stations decreases, so does the capital cost of networking, since fewer earth stations are constructed and taping facilities may be centralized. The operating costs for transmission to more than one or two dozen cable systems, however, rise as the number of receiving stations declines, since a decline in the number of receiving stations necessitates increased use of more costly terrestrial microwave or cable to link cable systems to regional receiving stations. Thus, regional receiving stations, while requiring less capital investment than separate earth stations for each participating cable company, may result in greater total costs, particularly where numerous geographically dispersed cable systems participate in the satellite networking scheme. For a discussion of one possible means of jointly operating receiving stations, see Proposed Second Report and Order on Domestic Communications-Satellite Facilities, *supra* note 8, at 23, 59-60 (reviewing the application of Phoenix-area broadcast stations

An advantage of this last structure is that the financial risks of networking are borne directly by more than one entity, and the costs involved in cable-satellite networking make broad financial support critical—aside from ground station costs, full-time lease of a transponder costs one aside from ground station costs, full-time lease of a transponder costs \$1,700,000 per year.⁷¹

II. PROBLEMS: SHARED USE, CARRIER STATUS AND ANTITRUST

A number of legal problems are raised by the possible cable-satellite ventures. These problems include the validity of restrictions on multi-party use of satellite transponders, the extent to which an entity operating a cable-satellite network must comply with Communications Act provisions and FCC regulations applicable to communications common carriers, and the legality of such a network under the antitrust laws.

A. Share and Share Alike

The communications carriers that have filed tariffs for domestic satellite facilities have placed restrictions on the use of satellite channels that may inhibit their use for cable networking. All three of the tariffs presently on file with the FCC for provision of domestic communications satellite services prohibit the resale of such services by customers, except by other common carriers consistent with those carriers' tariffs.⁷² Additionally, only one of the tariffs permits joint use of a television program transmission channel, and that tariff does not provide for long-term lease of a program transmission channel.⁷³

for jointly owned and operated earth station). We note also that if the joint venture did not have use for a transponder's full capacity, then, like a single-cable company, program producer or distributor, it could attempt to share the excess capacity with others.

71. See Western Union Tel. Co. Tariff, FCC No. 261 ¶ 5.2.1.

72. See American Satellite Corp. Tariff, FCC No. 1 ¶ 2.2(E); RCA Global Communications, Inc. Tariff, FCC No. 93 ¶ 2.2(B); Western Union Tel. Co. Tariff, FCC No. 261 ¶ 3.2.3.

73. RCA Global Communications, Inc. Tariff, FCC No. 93 ¶¶ 2.2(B), 3.2-3.5.1, 3.9.1. While American Satellite Corp. Tariff, FCC No. 1 ¶ 2.2(F) permits joint use of audio transmission channels, the American Satellite tariff does not provide for use of bandwidths sufficient for video program transmission which requires an entire transponder's bandwidth. Western Union does lease entire transponders, but allows joint use only for voice grade channels purchased at the single channel rate. Western Union Tel. Co. Tariff, FCC No. 261 ¶ 4.1.3.

The carriers have defined joint users as persons designated by a customer as another user of the service furnished the customer. See, e.g., RCA Global Communications, Inc. Tariff, FCC No. 93 ¶ 2.4. Resale as used here is referred to by the carriers as receipt by the customer or joint user of payment for the "collection, transmission or delivery of any communications for others." *Id.* ¶ 2.2. (After this article went to press, Western Union amended its satellite tariff to provide for part-time recurring use of video

Together, the resale and joint use restrictions might appear to deter use of satellites for networking by a joint venture and also appear to deter satellite use by individual cable companies, program producers, or distributors who depend on sharing or subleasing excess capacity. The networking possibilities that do not depend on one entity bearing all the financial risks, as with one company networking (*i.e.*, providing programming and distribution to participating cable systems), require some form of joint use of a satellite transponder.⁷⁴ Having cable systems acquire programs jointly and contract individually with carriers for transmission would not be a satisfactory solution to the joint use problem. First, individual cable systems do not have full-time transponder needs, and only one satellite tariff presently on file provides rates specifically applicable to occasional use for television program transmission.⁷⁵ Second, a major advantage of full-time, long-term lease of a transponder is a lower cost to the lessee than would be charged for the same cumulative use of transponder space for short-term or part-time use. For example, the Western Union tariff for satellite services prescribes a rate for monthly, full-time transponder lease that costs nearly one-half million dollars (27 percent) more over the course of a year than a lease for the full year's term;⁷⁶ the aggregate monthly cost for voice-grade channel use occupying a transponder's full capacity would be nearly three times the cost for the year-long lease of a transponder.⁷⁷ Similarly, continuous program transmission for 10 hours each day under the only occasional use service available would cost 41 percent more over the course of a year than a fixed one year lease;⁷⁸

transmission channels and for occasional use of such channels. In revising its tariff, Western Union also provided for shared use of video channels on a part-time recurring or occasional use basis. The tariff's structure, however, still appears designed to discourage shared use. Full-time lease of a transponder remains on a nonresale, nonshared use basis, and to distribute 10 hours of programming per day from Los Angeles to only three cities—New York, Chicago and Dallas—would cost approximately two times (part-time recurring) to nine times (occasional use) as much under the tariff provisions permitting shared use as would full-time lease of a transponder. *See* Western Union Tel. Co. Tariff, FCC No. 261 ¶¶ 3.2.3, 4.1.3, 5.2.1, 5.10.1(A)-(D), 5.10.2. Another recent indication that shared use problems may continue to be of concern to satellite users is the controversy over RCA's tariff. Both other satellite carriers have challenged the shared use provision in RCA's tariff, contending that the way in which shared use is implemented abolishes the distinction between shared and individual use. TELECOMMUNICATIONS REP., Vol. 41, No. 24, June 16, 1975 at 23.)

74. *See* text at notes 63-70 *supra*.

75. RCA Global Communications, Inc. Tariff, FCC No. 93 ¶ 3.9.1(B). *See* note 78 *infra*.

76. Western Union Tel. Co. Tariff, FCC No. 261 ¶¶ 4.2.2, 5.1.1, 5.2.1.

77. *Id.* at ¶¶ 5.2.1, 5.3.1; *see* note 23 *supra*. These tariffs are presently under investigation by the FCC. *See* Western Union Tel. Co., 47 F.C.C.2d 639 (1974).

78. *See* RCA Global Communications, Inc. Tariff, FCC No. 93 ¶ 4.5 (occasional use); Western Union Tel. Co. Tariff, FCC No. 261 ¶ 5.2.1 (long-term lease). Compari-

noncontinuous program transmission (e.g., five two-hour transmissions) aggregating ten hours a day under the occasional use tariff would cost more than double the charge for full transponder long-term lease.⁷⁹

It is possible that if cable systems sought an interpretation of present tariff provisions, the FCC would rule that cable-satellite networking by a joint venture does not constitute "joint use" of satellite facilities and that the venture does not resell communications services. A similar problem arose soon after passage of the Communications Act concerning a joint venture incorporated by a group of airline companies to supervise the airlines' use of radio frequencies.⁸⁰ The joint venture, Aeronautical Radio, Inc. (ARINC), also provided airlines with weather reports and information regarding landing conditions and other matters of interest to aviators. AT&T refused to provide private line services to ARINC on the ground that ARINC would compete with AT&T by reselling communications services in which it had no direct interest. ARINC then complained to the FCC. In rejecting AT&T's defense of its refusal to provide service to ARINC, the Commission declined to look through ARINC to its stockholder-customers; instead, the Commission said that ARINC had a direct interest of its own in the communications services it sought to obtain.⁸¹ Implicit in the Commission's *ARINC* decision are two rulings of importance to cable-satellite networking:⁸² first, since a

son of the cost of long-term lease and occasional use is made to different tariffs because, as noted above, only RCA provides for occasional use of program transmission channels and only Western Union provides for long-term transponder lease. (Although Western Union has now amended its tariff to provide for occasional and part-time recurring use, the Western Union tariff reflects even greater disparity between costs of full-time, long-term and occasional use. See note 73 *supra*. RCA has also amended its tariff to provide a special rate for part-time program transmission that would allow Home Box Office, see note 6 *supra*, to pay a reduced rate initially for satellite program transmission with the rate escalating over the term of RCA's agreement with Home Box Office.)

79. See Tariffs cited note 78 *supra*.

80. See *Aeronautical Radio, Inc. v. American Tel. & Tel. Co.*, 4 F.C.C. 155 (1937).

81. *Id.* at 165.

82. The *ARINC* decision, which is the seminal case in joint use law, is entirely dictum. After rejecting AT&T's reasons for not providing service and also rejecting ARINC's claim to a special class of rates, the Commission dismissed the complaint because ARINC had not requested the disputed service in its own name. *Id.* at 167. The dictum, however, was effective—AT&T agreed to provide private line service to ARINC and currently provides such service to several other associations as well. *American Tel. & Tel. Co. Tariff*, FCC No. 260 ¶ 2.2.1; see *American Trucking Ass'n v. American Tel. & Tel. Co.*, 47 F.C.C.2d 644, 648-49 (1974).

It might be argued that *ARINC* is of slight importance to cable-satellite networking because the Commission emphasized ARINC's important function in protecting the safety of persons and property, a function no cable-satellite joint venture would entail. We do not, however, read *ARINC* as turning on the nature of a joint venture's business: the primary focus of the decision was on the existence of any business that could be classified as part of the joint venture rather than its parent company. Additionally, the

joint venture may be viewed as having communications needs of its own, separate from those of the companies that created it, use of services by a joint venture may not constitute joint use; second, a company does not necessarily resell communications services by furnishing others with a service to which communications services are essential.⁸³

Even if a cable-satellite joint venture were found to constitute joint use of satellite facilities, assuming that restrictions on joint use remain in effect,⁸⁴

Commission has declared, albeit in a different context, that "some departures from conventional standards may be required if the public is to realize the potential benefit of [satellites]." Second Report and Order on Domestic Communications-Satellite Facilities, *supra* note 3, at 849. The FCC thus might find *ARINC*'s rationale precedent for opening satellites for broader joint use, even if *ARINC* is given a more narrow reading for other purposes. The Commission's decision in *Sterling Communications, Inc.*, 39 F.C.C.2d 101 (1973), is also authority for a liberal construction of *ARINC* in considering cable-satellite joint use. In *Sterling*, the Commission granted a waiver of a rule restricting availability of certain facilities for distributing cable programming, stating: "We have concluded . . . that the distribution of non-broadcast programming by cable television systems, subject to appropriate regulation, is in the public interest . . . [and] have encouraged system interconnection for distribution of this programming." *Id.* at 102.

83. The extent to which communications services are "resold" when the cost of those services is a component of the communications user's charge to its customers is considered at notes 99-108 *infra*.

84. Theoretically, if such restrictions are not cost-justified, they will not remain in effect. Since the Commission has authorized multiple entry into the domestic satellite field, the charges for satellite services should not include any monopoly "rent." *Cf.* Posner, *supra* note 11, at 551-53, 562-63. Different charges for competitively-furnished satellite services should be charged only to the extent of the differences in marginal costs of those services. *See* A. KAHN, *supra* note 12, at 65-75; *cf. id.* at 75-83. Thus, if the costs of joint use of a transponder are no greater than the costs of use by a single entity, no different charge should be imposed for joint use, nor should it be prohibited. While satellite technology is in a relatively embryonic state, however, satellite carriers may not know precisely what costs are for provision of various services, and the differences in satellite systems may leave some room for noncompetitive pricing, at least for a period of time. *See id.* at 123-50; Posner, *supra* note 11, at 569-71, regarding the special case of price discrimination for continuously declining marginal cost services.

A complicating factor in predicting the satellite carriers' attitude toward sharing is rate regulation. This factor would not lead carriers to overprice facilities to joint users, but might encourage carriers to restrict joint use. As a result of regulators' use of a rate base plus rate of return formula for ascertaining reasonableness of carriers' charges, regulated industries have an apparent incentive to expand capital investment (through creation of excess capacity for present ventures, pursuit of new, capital intensive ventures, etc.), until total net revenues are a proportion of total net plant equal to the permissible rate of return. *See* A. KAHN, *supra* note 16, at 49-59; Averch & Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV. 1052 (1962); Trebing, *Common Carrier Regulation—The Silent Crisis*, 34 LAW & CONTEMP. PROB. 299, 314-18 (1969); Wellisz, *Regulation of Natural Gas Pipeline Companies: An Economic Analysis*, 71 J. POL. ECON. 30 (1963). One means by which a regulated industry may accomplish this expansion is by prohibiting shared use of facilities and competing with other carriers providing similar facilities by giving bulk discounts making it economical for consumers

or if networking by a joint venture, or another entity, were found to include resale of communications services, the FCC might nonetheless forbid imposition of restrictions on such use of satellite facilities. The Communications Act requires charges and practices of communications common carriers to be just and reasonable⁸⁵ and not unduly discriminatory.⁸⁶ The Commission has passed on a number of complaints under these provisions in recent years, and has shown an increasing inclination to require common carriers to justify discriminations in tariffed services.⁸⁷

In 1970, the Commission concluded that limitations placed by AT&T on sharing of its TELPAK services were unduly discriminatory and ordered tariffs filed permitting unlimited sharing.⁸⁸ Presently, the Commission is

to make bulk purchases far in excess of their needs. This may explain AT&T's prohibition of TELPAK sharing; the discounts from single channel private line rates make use of the 60-channel TELPAK group economical at a 25 percent fill, and use of the 240-channel group is economical at a 28 percent fill. See Comments of American Trucking Association in FCC Docket No. 20097, filed Dec. 11, 1974.

Of course, regulatory agencies such as the FCC endeavor to eliminate many of the cross-subsidies that are likely to occur where a regulated entity enjoys a monopoly in at least one of its operations. See, e.g., *American Tel. & Tel. Co.*, 18 F.C.C.2d 761, 762 (1969). The regulators' desiderata in this regard, however, are far from certain of practical achievement. First, while seeking to make various services pay their own way, the FCC also attempts to assure common carriers a reasonable overall rate of return on capital investment used to provide services within the FCC's jurisdiction. *Id.* at 766. Second, as the Commission has noted, significant common costs are involved in the provision of many common carrier services, and it may be difficult to allocate investment accurately to one particular service. *Id.*; *American Tel. & Tel. Co.*, 9 F.C.C.2d 30, 88-110 (1967). Finally, although the FCC may attempt to prevent the result outlined above, the regulated carriers may nonetheless seek to maximize profits by using capital expanding devices and have at their disposal a variety of means for shaping their activity to that end while at the same time appearing to fit within the regulatory mold.

85. 47 U.S.C. § 201(b) (1970).

86. *Id.* § 202(a).

87. See, e.g., *Hughes Sports Network, Inc. v. American Tel. & Tel. Co.*, 34 F.C.C.2d 691 (1972). Probably the best known proceeding in which the Commission has invalidated rates as unreasonably discriminatory is the *Private Line Case*, 34 F.C.C. 217, modified, 34 F.C.C. 1094 (1963), affirmed *sub nom.*, *Wilson & Co. v. United States*, 335 F.2d 788 (7th Cir. 1964), cert. denied on relevant points, 380 U.S. 951, cert. granted on other points, 380 U.S. 950 (1965), remanded for consent settlement, 382 U.S. 454 (1966).

88. *Telpak Tariff Sharing Provisions*, 23 F.C.C.2d 606, 624 (1970). The Second Circuit affirmed the Commission's finding that AT&T's sharing provisions were discriminatory, but reversed the order requiring unlimited sharing on the ground that hearings, required by statute before the FCC can set rates, had not been held. *American Tel. & Tel. Co. v. FCC*, 449 F.2d 439 (2d Cir. 1971). The Court later upheld the FCC's order, on remand, that AT&T simply file nondiscriminatory tariffs. *National Ass'n of Motor Bus Owners v. FCC*, 460 F.2d 561 (2d Cir. 1972). Subsequently, AT&T eliminated all provision for TELPAK sharing. See *American Tel. & Tel. Co. Tariff*, FCC No. 260 ¶ 3.1.5(A)(1).

conducting an inquiry regarding the prohibitions AT&T and Western Union have placed on shared use and resale affecting a wide range of communications services.⁸⁹ The expressed concern of the FCC is that such restrictions may be unjust, unreasonable or unduly discriminatory.⁹⁰ In light of the Commission's declaration in instituting this inquiry that such "sharing arrangements as are now possible result in greater access to and fuller utilization of our nation's communications capacity,"⁹¹ shared use and resale prohibitions may be struck down as violative of the Communications Act.

B. Status: What Makes a Carrier Common?

Authorization of shared use and resale of satellite communications services would facilitate development of a cable network. Utilization of sharing and resale arrangements, however, creates another problem: a customer for satellite transponder space sharing or reselling that space might be deemed a common carrier. The Communications Act imposes a wide variety of restraints and regulations on common carriers;⁹² these provisions, *inter alia*, regulate the charges that may be made⁹³ and the services that must be furnished,⁹⁴ require approval before certain services may be offered,⁹⁵ mandate reports on various activities,⁹⁶ and authorize a number of actions and forfeitures against carriers.⁹⁷ The cable networkers would, of course, want to avoid the financial and operational burdens attendant upon common carrier status. Unfortunately, the Communications Act gives no clear test for determining when an entity is operating as a common carrier and, hence, subject to the Act's restrictions; the Act defines a common carrier as "any

89. *American Trucking Ass'n v. American Tel. & Tel. Co.*, 47 F.C.C.2d 644 (1974). We note that AT&T presently is conducting a two-year experiment allowing sharing of program transmission interexchange service. See *American Tel. & Tel. Co. Tariff*, FCC No. 260 ¶ 3.2.7(B)(4)(a); *American Tel. & Tel. Co.*, 44 F.C.C.2d 525, 528 (1973). At the end of the experimental period, the FCC and interested parties will evaluate the market effect of this sharing provision.

90. *American Trucking Ass'n v. American Tel. & Tel. Co.*, 47 F.C.C.2d 644, 649 (1974). In comments filed in the proceedings initiated in *American Trucking Ass'n*, the Office of Telecommunications Policy (OTP) also has indicated its concern with limitations on sharing and resale both as a matter of communications law and as a matter of sound regulatory policy. Comments of OTP in F.C.C. Docket No. 20097, filed Feb. 25, 1974.

91. *American Trucking Ass'n v. American Tel. & Tel. Co.*, 47 F.C.C.2d 644, 651 (1974).

92. See 47 U.S.C. §§ 201-23 (1970).

93. *Id.* §§ 201, 202, 203.

94. *Id.* §§ 201, 203, 205.

95. *Id.* § 214.

96. *Id.* §§ 211, 219.

97. *Id.* §§ 202(c), 203(e), 205(b), 206, 207.

person engaged as a common carrier for hire in interstate or foreign commerce by wire or radio or in interstate or foreign radio transmission of energy"⁹⁸

In assessing the likelihood of being determined to be a common carrier, the relevant considerations must be distilled from a series of FCC letters and rulings concluding that specific facts do or do not make the entity involved a common carrier. One of the earliest decisions to deal with this problem was the *ARINC* case.⁹⁹ At the end of its opinion, the Commission addressed AT&T's contention that ARINC was a communications common carrier. The contention was based on ARINC's charges to nonmembers who benefited from ARINC's services. The Commission declared that ARINC was not a common carrier, finding that the charges were not for communications services, but for the related provision of information, although ARINC recouped the cost of communications services used to supply the information.¹⁰⁰

A similar problem was raised in 1951 by the Florists' Telegraph Delivery Association (FTDA), which proposed to lease telegraph and telephone lines to handle flower orders for FTDA member florists. The Commission, in a letter to the Association, said FTDA would be a common carrier if it sent messages from flower purchasers to flower recipients in connection with the sale of flowers.¹⁰¹ No qualifying language was inserted by the Commission to limit its statement to instances where a profit was made on the message delivery part of the transaction.¹⁰² The Commission did state, however, that

98. *Id.* § 153(h).

99. *Aeronautical Radio, Inc. v. American Tel. & Tel. Co.*, 4 F.C.C. 155 (1937). *See* text at notes 80-82 *supra*.

100. 4 F.C.C. at 165. The Commission also explicitly found that no profit was made from resale of communications services. *Id.* at 166.

101. Letter to Florists' Tel. Delivery Ass'n, FCC Public Notice No. 1630, Dec. 6, 1951.

102. Although the Commission's letter is terse and does not set forth the reasoning behind its conclusions, the failure to limit its statement (that FTDA would be a common carrier if it carried messages between members of the general public) to instances where FTDA or its members made a profit may be due to the difficulty, or artificiality, of dividing profits from a single transaction into commodity, delivery and communication components. It would be possible to determine whether FTDA made a direct profit on transmission of the communications, but it would not be so simple to determine what part of the FTDA member florists' profit was from sale of the flowers and what part from sale of the associated message transmission service. The Commission continues to inquire whether the entity leasing communications facilities made a profit from use of those facilities by others, but does not scrutinize division of that profit. *See* text at notes 107-108 *infra*. *But see* note 114 *infra*. Where an entity transmits communications for itself or its members, and not for the public, the problem of profit scrutiny may be treated differently. In such situations, the Commission has expressed concern that no profit is derived from transmission of communications, but has seemed to accept as valid

if FTDA transmitted messages on a nonprofit basis only between member florists, and not between members of the public, it would not be a common carrier.¹⁰³

The Commission has stated in several other situations that use of leased communications facilities to provide specialized information to a limited group of recipients does not constitute common carriage. While generally these situations involved distribution of information by an association solely to its members,¹⁰⁴ the Commission has found no common carriage when an entity has distributed information to an otherwise limited class.¹⁰⁵ The Commission also has rejected contentions that arrangements for sharing leased communications facilities necessarily render the lessee a common carrier.¹⁰⁶ A 1971 letter from the Acting Chief of the Common Carrier Bureau to Scantlin Electronics, Inc. indicated that it would not be acting as a common carrier in using multiplex equipment to subdivide leased channels and share excess channel capacity with others.¹⁰⁷ Scantlin absorbed the costs of unused capacity and joint users paid only a pro rata share of the cost of facilities used during the users' participation, with Scantlin receiving no profit

parties' statements that profit was from the entity's or members' noncommunications business and not from transmission of communications. *Cf.* Letter to Florists' Tel. Delivery Ass'n, FCC Public Notice No. 1630, Dec. 6, 1951; note 114 *infra*.

103. Letter to Florists' Tel. Delivery Ass'n, FCC Public Notice No. 1630, Dec. 6, 1951.

104. *See, e.g.*, Report and Order on Specialized Emergency Radio Service, 24 F.C.C.2d 310 (1970); Letter from Wayne Coy, Chairman, Federal Communications Commission, to Counsel for Chicago Board of Trade, Jan. 11, 1950.

105. *See* Letter from Wayne Coy, Chairman, Federal Communications Commission, to Counsel for New York Curb Exchange, undated reply to letter of July 26, 1950. The Curb Exchange proposed to provide a ticker service on a nondiscriminatory basis to all who applied and had a "legitimate use" for such service. The Commission may have felt constrained in ruling on the status of the Curb Exchange by a congressional statement that the Communications Act's definition of common carriers was not intended to include press associations or news services, as the Curb Exchange claimed to be in providing its ticker service. CONF. REP. NO. 1918, 73d Cong., 2d Sess. 45 (1934). The FTDA ruling, however, clearly did not involve a press association or news service, and it is doubtful that the FCC would limit its earlier rulings to news services or similar groups. *See also* text at note 107 *infra*.

106. *See, e.g.*, Preston Trucking Co., 31 F.C.C.2d 366 (1971) (shared use of microwave system leased by Preston did not, of itself, render Preston a common carrier; entity constructing system, and not Preston, had risk of nonuse and opportunity to profit from full use; inquiry was instituted, however, regarding specific provisions of Preston's agreement with entity constructing system). The Commission also has rejected contentions that shared use of private microwave systems, not leased from another entity, makes the users common carriers or constitutes "pseudo-common carriage" of communications that should be carried by regulated carriers. *See* Cooperative Sharing of Operational Fixed Stations, 4 F.C.C.2d 406 (1966).

107. Letter from Acting Chief, FCC Common Carrier Bureau, to Scantlin Elec., Inc., Feb. 5, 1971.

from those sharing the channels for use of the multiplex equipment and no profit from its customers or joint users for the leased facilities. A letter issued the same day to Timeplex, Inc., however, stated that Timeplex would be engaged in common carriage if it operated a similar multiplexing scheme at a profit, even though the profit would come from use of the Timeplex multiplexing equipment and not from the leased channels.¹⁰⁸

The Commission was faced with another facet of the common carrier question in 1967 when Western Union filed a tariff for its "Sicom" service, a "computer-based, information service for members of the brokerage community."¹⁰⁹ The tariff offered channel facilities and equipment for transmission (on a store-and-forward basis) of communications through Western Union's computer center to and from points on the customer's private network.¹¹⁰ The question raised by the FCC was whether such services were communications services for which tariffs were properly filed or, instead, whether they were noncommunications services for which tariffs could not be accepted.¹¹¹ After reviewing the various computer functions that would be performed as part of the Sicom service,¹¹² the Commission decided that most had analogues in accepted common carrier services and that, even if each function might not be a communications service, in aggregate they formed a communications service properly subject to tariff.¹¹³ The Commission more recently has attempted to refine its analysis of when services are communications services, provision of which might render the provider subject to FCC jurisdiction as a common carrier, and when services are data processing services, outside the Commission's bailiwick. In summary, the Commission has concluded that some services are essentially communications, using data processing as an integral and incidental part of the service; other services are essentially data processing, using communications as an integral and incidental part.¹¹⁴

108. Letter from Acting Chief, FCC Common Carrier Bureau to Timeplex, Inc., Feb. 5, 1971.

109. Western Union Tel. Co., 11 F.C.C.2d 1, 2 (1967).

110. *Id.* at 2-3. The breakdown of charges for each customer's dedicated facilities, for shared facilities in each terminal city, and for use of Western Union's computer facility for message switching and other functions is reprinted in *id.* at 4.

111. *Id.* at 8. The Commission said that 47 U.S.C. § 203 (1964) provided only for the filing of tariffs covering interstate and foreign communications services.

112. Those functions included, in addition to message switching: running error checks, implementing transmission and delivery priorities, recording and reporting system use, exercising format control, and storing and retrieving messages. *Id.* at 9.

113. *Id.*

114. Computer Use of Communications Facilities, 28 F.C.C.2d 267, 277-79 (1971). A series of letters respecting a "management" service operated by RCA Corporation reflects the Commission's continuing concern both with what constitutes a communications service and with what shared use of facilities is necessary to trigger common carrier

Piecing together the Commission's pronouncements on common carriage, it appears that, if carefully structured, none of the proposals for cable networking over leased satellite facilities would render the lessee a common carrier. Under the joint venture scheme, distribution to members of the venture or to other cable systems would not be common carriage as long as no profit is made on transmission of the programming or any closely related service. If the joint ventures profit from presenting the programming to their subscribers or from selling it to other cable systems, the joint venture still would not constitute common carriage. The venturers would be in the same position as FTDA member florists, not in the position of Timeplex: first, no profit would be made by the venture or its parents from any service associated with message transmission between third parties, and, second, the program-selling profit, like FTDA members' flower-selling profit, would be derived from a clearly noncommunications service, and not from charges for use of the leased satellite program transmission channels or for facilities inextricably connected with such leased channels.

Similarly, if one cable system, program supplier, or broker leased a transponder and shared the excess capacity with other entities, it would not be a common carrier unless it made a profit from charges for sharing the leased channel or made the excess capacity on the leased facilities available for hire to the general public. It should be noted that a distributor, acting in an entrepreneurial capacity to link program producers and cable systems, at first blush might appear to have more difficulty than a cable system or program producer in avoiding classification as a common carrier.¹¹⁵ Under

status. RCA operates and maintains multiplex equipment to subdivide voice grade circuits for use as slow speed data circuits. These facilities then are used by RCA and by others whose point-to-point needs are compatible with those of RCA. In conjunction with this arrangement, RCA also provides a network management service from which it may make a profit. The Common Carrier Bureau does not treat RCA as a common carrier in this operation, but does require periodic reports. See Letter from Counsel for RCA to Chief of Domestic Rates Division, Mar. 8, 1972; Letter from Chief of Domestic Rates Division to Counsel for RCA, Apr. 28, 1972; Letter from Counsel for Microwave Communications, Inc. to Chief of Domestic Rates Division, May 30, 1972; Letter from AT&T to Chief of Domestic Rates Division, June 14, 1972; Letter from Counsel for RCA to Chief of Domestic Rates Division, June 14, 1972; Letter from Chief of Domestic Rates Division to Counsel for RCA, June 28, 1972.

115. Because the distributor neither produces programming nor owns a cable system, he might appear to be simply a carrier of communications between producers and cable operators. If that were the sole function a distributor performed (providing the transmission link), it is likely that the FCC would find him to be a common carrier. *But cf.* Comments of OTP, *supra* note 90. We envision, however, the more likely operation of an entrepreneur in this field as including the functions of purchasing program rights and reselling them, aggregating programming on the one hand and cable systems on the other.

the Commission's decisions, however, the broker would have the same attributes relevant to common carrier status as the cable system or program supplier; all of these entities would be using communications services to perform other noncommunications services for customers and sharing excess capacity on a nonprofit basis. The clearest case for non-common carrier operation would be networking by a single cable system or other nonjoint enterprise; satellite facilities would be used solely for its communications needs, *i.e.*, transmitting its programming to contracting cable systems.

C. Antitrust Considerations: Of Restraint, Monopoly and Merger

The last major legal problem in forming a cable-satellite network is posed by the antitrust laws. And it is the fourth networking structure, the joint venture, which is most likely to encounter antitrust difficulties.¹¹⁶ Antitrust concern with a networking joint venture could focus on possible restraints on trade, monopolization, or merger of competing or potentially competing firms. The antitrust principles governing restraint, monopolization and merger, respectively, control agreements among companies, actions by a single company, and formation or acquisition of a company by one or more others.

1. *Merger.*—Of relevant antitrust doctrines, merger analysis is probably the most straightforward. Section 7 of the Clayton Act provides, *inter alia*:

No corporation engaged in commerce shall acquire, directly or indirectly, the whole or any part of the stock or other share capital . . . of another corporation engaged also in commerce, where in any line of commerce in any section of the country, the effect of such acquisition may be substantially to lessen competition or tend to create a monopoly.¹¹⁷

Simplistically viewed, two elements are needed for violation of the merger prohibition: (1) a merger, and (2) possible lessening of competition as its consequence.

The first element would be established if, for instance, a joint stock corporation were formed by several cable companies to handle the acquisi-

116. Of course, myriad possible antitrust problems may be encountered by the other possible structures, and a cable-satellite joint venture might violate the antitrust laws in numerous ways not discussed here. Due to the twin constraints of time and space we limit our antitrust discussions to the problems implicit in a proposed cable-satellite networking structure; only the joint venture necessarily raises significant antitrust questions. Additionally, in discussing "bottleneck" problems under the Sherman Act, *see* text at notes 127-148 *infra*, we focus on the joint venture's possible acquisition of a strategic position with respect to program transmission via satellite. While program acquisition presents many of the same antitrust problems as transmission, the problems associated with program acquisition are not similarly peculiar to the subject of this article.

117. 15 U.S.C. § 18 (1970).

tion and transmission of origination programming. The Supreme Court's decision in *United States v. Penn-Olin Chemical Co.*¹¹⁸ is the landmark case establishing the applicability of section 7 to such "partial mergers." Pennsalt Chemical Corporation and Olin Mathieson Chemical Corporation had formed a joint venture, the Penn-Olin Chemical Company, to produce and market sodium chlorate in the Southeastern United States. The parent companies had argued that formation of a new company was outside the scope of section 7's proscription. Rejecting this argument, the Court warned:

The joint venture, like the "merger" and the "conglomeration," often creates anticompetitive dangers Inevitably, the operations of the joint venture will be frozen to those lines of commerce which will not bring it into competition with the parents, and the latter, by the same token, will be foreclosed from the joint venture's market.¹¹⁹

Whether the satellite joint venture violates section 7, then, depends only on the second element: substantial potential lessening of competition. Before evaluating the factors that are analyzed to gauge the direction and extent of a merger's effect on competition, it is necessary to determine the market (or markets) in which competitive effect is to be assessed.¹²⁰ Each market has a product and a geographic limitation.¹²¹ Presumably, a nationwide geographic market would be involved here. The difficult part, however, is defining the relevant product market or markets. The basic rule for determining how broadly or narrowly the lines defining a product market should be drawn is that the market should include the product or service provided plus all close substitutes.¹²² And within a broader market or service there may be submarkets, the effect on which must be analyzed.¹²³ Without attempting to work through the necessary market analysis to ascertain the facility with which types of transmission and types of programming may be substituted for one another, we note that a cable-satellite networking operation could involve a variety of product markets: satellite transmission of cable origination programming, transmission of cable origination programming by any means, all program transmission by satellites, or all program transmission by any means. Additionally, the effect a joint venture might have on competi-

118. 378 U.S. 158 (1964).

119. *Id.* at 169. *See also id.* at 167-68.

120. *United States v. Aluminum Co. of America*, 377 U.S. 271, 273 (1964).

121. *See United States v. First Nat'l Bank & Trust Co.*, 376 U.S. 665, 667-69 (1964).

122. *See United States v. Continental Can Co.*, 378 U.S. 441, 447-58 (1964); *United States v. Aluminum Co. of America*, 377 U.S. 271, 273-77 (1964); *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377, 394-95 (1956).

123. *See Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962).

tion among the present companies for cable franchises would have to be examined.

Whatever the relevant market, it seems unlikely that cable-satellite networking would violate the Clayton Act's merger prohibition. The effect of a joint cable venture entering most of the markets noted above would probably be procompetitive, given domination of these markets by one or a few companies. Even viewing the narrowest of these markets,¹²⁴ satellite transmission of cable origination programming, the networking joint venture is not likely to have anticompetitive effects.

The *Penn-Olin* decision stated that a joint venture might lessen competition if one parent company would have entered the relevant market on its own with the other parent remaining as a significant potential competitor.¹²⁵ The Court, however, refused to draw any conclusion as to competitive effect, remanding for consideration of a variety of factors, including the number and power of competitors in the market, the background of their growth, the power of the joint venturers and relationship of their lines of commerce, the reasons for creation of the joint venture, and appraisal of what competition would have been in the relevant market if one of the joint venturers had entered alone.¹²⁶ If cable systems choose to form cable-satellite networks themselves rather than merely purchasing prepackaged network services from a program producer or distributor, the fact that would make a cable-satellite networking venture most likely, inability of any single cable system to enter the cable-satellite market alone, would also under the *Penn-Olin* analysis be likely to protect the venture from stigmatization as an anticompetitive merger.

2. *Bottleneck Problems—Restraint and Monopoly.*—While cable-satellite networking arrangements seem unlikely to be struck down under merger doctrines, more serious problems are raised by other antitrust doctrines. Section 1 of the Sherman Act makes illegal contracts, combinations and conspiracies "in restraint of trade"¹²⁷ Section 2 of the Sherman Act prohibits monopolization and attempts to monopolize.¹²⁸ These sections forbid a wide variety of agreements among firms and actions by one or a group of firms. For cable-satellite networking, however, the most likely source of Sherman Act problems would be agreements among cable

124. The narrowest market is looked to here as the extreme case against cable-satellite networking because anticompetitive effect is likely to be greatest in the most narrowly defined market.

125. *United States v. Penn-Olin Chem. Co.*, 378 U.S. 158, 175-76 (1964).

126. *Id.* at 176-77.

127. 15 U.S.C. § 1 (1970).

128. *Id.* § 2.

companies to lease transponder space jointly for cable program transmission. Either or both of these Sherman Act proscriptions set forth above may be violated by parties controlling facilities essential to competition in a particular field. Control of such facilities results in creation of a "bottleneck" through which potential competitors must pass.¹²⁹

The classic bottleneck case is *United States v. Terminal Railroad Association*,¹³⁰ decided by the Supreme Court in 1912. Three different means for railroad access to St. Louis across the Mississippi River had been developed at various times. Each of these, two bridges and a ferry, connected to its own system of railroad terminals. One company, owned by a number of railroads, eventually obtained control of all three terminal systems, and the company's operating structure was such that each proprietary railroad had a veto over any nonproprietary railroad's use of the St. Louis terminals.¹³¹ The Court specifically found that the cost of constructing a bridge across the Mississippi, with connecting lines and terminals, was too great for any one railroad company to bear.¹³² In light of this fact, the Court ruled that although control of all St. Louis terminal facilities by one organization did not violate the Sherman Act,¹³³ the practices of the company that resulted in excluding competing railroads from use of those facilities violated sections 1 and 2 of the Sherman Act.¹³⁴ The Court ordered certain exclusionary practices discontinued and directed the terminal association to admit all interested rail companies to participation in ownership and control of the association.¹³⁵

Since *Terminal Railroad*, courts have found violations of the Sherman Act from control over a variety of bottleneck facilities.¹³⁶ The *Terminal Railroad* progeny establish that the exclusion of a competitor from an important resource may violate the antitrust laws even though the offending entity does not have monopoly control. In *Associated Press v. United States*,¹³⁷ the

129. See A. NEALE, *THE ANTITRUST LAWS OF THE UNITED STATES OF AMERICA* 68-71, 132-34 (1960). Neale distinguishes "bottleneck" situations from the normal competitive case in which exclusive dealing arrangements at two different levels of the market are necessary to exclude potential competitors. *Id.* at 68-69.

130. 224 U.S. 383 (1912).

131. *Id.* at 399-400.

132. *Id.* at 397.

133. *Id.* at 402-04.

134. *Id.* at 406-09.

135. *Id.* at 410-12.

136. See, e.g., *Lorain Journal Co. v. United States*, 342 U.S. 143 (1951) (control over advertising in town's only newspaper); *Associated Press v. United States*, 326 U.S. 1 (1945) (control over distribution of news from a large number of publishers); *Gamco, Inc. v. Providence Fruit & Produce Bldg.*, 194 F.2d 484 (1st Cir.), cert. denied, 344 U.S. 817 (1952) (control over building used for produce wholesaling); *American Fed'n of Tobacco Growers, Inc. v. Neal*, 183 F.2d 869 (4th Cir. 1950) (control over allocation of "selling time" to tobacco warehousemen).

137. *Associated Press v. United States*, 326 U.S. 1 (1945).

Supreme Court found that the Sherman Act was violated by Associated Press (AP) members' power to impede competitors from becoming AP members, and hence from sharing in AP news.¹³⁸ While other news sources existed, exclusion from news furnished by the Associated Press and 1,200 affiliated newspapers imposed a serious handicap on competition.¹³⁹ Similarly, in *Gamco, Inc. v. Providence Fruit & Produce Building*,¹⁴⁰ exclusion of a competitor from facilities peculiarly suited to wholesale produce marketing was held to be illegal although no showing was made that other equally good facilities could not be constructed. It was sufficient that no other comparable facilities existed.¹⁴¹ The *Gamco* court noted, however, that excluding competitors from the Produce Building would not violate the antitrust laws if based on "reasonable criteria," such as lack of space or financial unsoundness of an applicant for space in the building.¹⁴² Another variation of the *Terminal Railroad* situation was presented in *Otter Tail Power Co. v. United States*.¹⁴³ Otter Tail provided power to many towns in a single region and had the necessary distribution system to transmit power from generating sources to towns in that region. The company refused, however, to use its distribution system to wholesale power to towns that decided not to contract with Otter Tail to provide retail distribution as well. The Supreme Court concluded that Otter Tail's refusal to wholesale violated the Sherman Act.¹⁴⁴

These cases indicate that a cable-satellite venture may be required to include unwanted partners. If cable companies individually cannot afford to lease dedicated transponder space,¹⁴⁵ the joint venture leasing such space would occupy a strategic position with regard to cable program transmission. That strategic position apparently is sufficient to bring one within the scope of the bottleneck cases.¹⁴⁶ *Otter Tail*, like *Associated Press*, did not involve a true monopoly—other sources of power in the one case, and news in the other, were available to companies cut off by the dominant entity. And in *Gamco*, as in *Terminal Railroad*, there was no showing that the excluded companies jointly could not obtain facilities comparable to existing ones, use of which was foreclosed. "Finally, it is no defense that the members [of an enterprise] have built up a facility . . . for themselves; new

138. *See id.* at 15-16.

139. *See* A. NEALE, *supra* note 129, at 70-71.

140. 194 F.2d 484 (1st Cir.), *cert. denied*, 344 U.S. 817 (1952).

141. 194 F.2d at 486. Indeed, the lower court had specifically found that it would have been possible to duplicate the facilities from which *Gamco* was excluded. *See id.* at 488.

142. *Id.* at 487.

143. 410 U.S. 366 (1973).

144. *Id.* at 377-82.

145. *See* note 66 *supra*; text at notes 66 & 67 *supra*.

146. *See* A. NEALE, *supra* note 129, at 70-71.

entrants must still be allowed to share it on reasonable terms unless it is practicable for them to compete without it."¹⁴⁷ It is not clear just how impracticable competition without a particular facility must be for *Terminal Railroad* to apply; how much more costly satellite transmission is than terrestrial transmission, how great the savings over the cost of occasional use (where satellite carriers provide for such use) is to companies jointly leasing dedicated transponder space, and how many cable companies participate in a satellite networking venture may determine whether other cable companies must be afforded access to the venture.¹⁴⁸ With this caveat, it appears that in order to avoid the possible difficulties presented by *Terminal Railroad* and similar decisions, cable-satellite networking by a group of cable companies should be structured to allow participation by all interested cable operators meeting reasonable entrance requirements.

III. CONCLUSION

There is substantial promise for the development of a network utilizing satellite transmission to provide high quality origination programming to cable systems. Because the costs associated with such a network are quite high, the best prospect for a cable-satellite network appears to be either a well-financed program producer or distributor or a joint venture pooling the resources of several cable companies. Any networking attempt, especially by a joint venture, would have to overcome several legal hurdles. While these hurdles may cause potential networks to hesitate, they should not prevent formation of a cable-satellite network—the enterprise should be able to lease a satellite transponder channel despite present tariff restrictions; if properly structured, it is unlikely that the enterprise would be subject to the burdens associated with common carrier status or to invalidation under antitrust merger law. Any cable joint venture should take care, however, to afford other cable systems reasonable access to the network's facilities to avoid difficulties from antitrust provisions concerning trade restraints and monopolization. So structured, the network should provide a new source of programming to television viewers.

147. *Id.* at 71.

148. In discussing antitrust considerations, we have assumed that cable companies are competitors; although they do not serve the same customers, they do compete for franchises, and their access to inexpensive means of transmission and to high quality programming may affect franchise awards.

In addition to the antitrust considerations regarding bottleneck facilities, the FCC may require shared facilities to be open to all potential users. The Commission's staff, reviewing the proposal of certain Phoenix area broadcast stations for joint ownership of earth station receiving facilities, suggested that any grant of such a joint venture be conditioned on a guarantee that competing stations would be allowed to participate in or have access to the facility. Proposed Second Report and Order on Domestic Communications-Satellite Facilities, *supra* note 8, at 61.