The Political Economy of Cable Television Regulation

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I. THE PROBLEMS OF LOCAL MONOPOLIES IN CABLE COMMUNICATIONS

The rapid development of cable television has led to a widespread but mistaken belief that the large number of viewing channels of the medium will necessarily lead to a great diversity of program sources.

This view, however, overlooks the inherent structural problems of the cable television industry and of the dual function which it affords to a cable franchise holder. Like a telephone company, a franchisee holds a natural monopoly in the local transmission of communication signals; but unlike a telephone company, it is not required to act as a common carrier (*FCC v. Midwest Video,* 1979) and thus not obligated to transmit the programs of other producers and syndicators. Instead, a cable operator has to a very large extent control and discretion over the content of the video channels (Sucherman, 1971), an ability normally described as programming power.

Such programming ability is a remarkable source of power over visual information. The number of channels in recently proposed cable systems for metropolitan areas is often above one hundred, up from the standard twelve channels of only a few years ago.

The control over channel access has, by the logic of profit maximization, consequences on the sources of the programs, and is at the root of the present vertical extension of cable operations into the syndication and production of programs, where the profits of program production and syndication can be appropriated in addition to those of mere transmission. For example, the American Television and Communications Corporation (ATC), the nation's largest cable operator in 1981, is linked, through its parent company Time, Inc., with both the largest program supplier, Home Box Office (HBO), as well as with the program service Cinemax and the USA Network. Group W Cable, the third largest cable system, is a half-owner of the movie service "Showtime," and through its parent Westinghouse owns Satellite News Channel. Warner Amex, similarly, owns the "Movie Channel," "Nickelodeon," and "Music TV," three widely distributed networks. Each cable system can restrict the access of the program services which it does not own in favor of its own program services.

A recent in-depth FCC Special Report (FCC, 1980b) denies the harmful possibilities of such vertical integration, concluding instead that a cable operator would buy the programs of the cheapest supplier, regardless of who it is. This analysis, however, does not take into account the economies of scale and scope for a program supplier with a large and assured market, which reduce his cost of production relative to that of his non-integrated competitors. The analysis is also based on an implicit assumption of a perfectly elastic, i.e., horizontal, supply curve. As soon as one allows for the more realistic upwardly sloping supply curve,[1] in which a higher market

price increases the supplied quantity, a "producer's surplus" exists. By purchasing from his own program subsidiaries, a cable operator can therefore appropriate part or all of this rent to himself.[2] Additionally, the FCC analysis implicitly equates an optimal policy with one that causes programs to be produced efficiently, even if the result may be that they are all produced by one company. Yet cost-efficiency of program production cannot rank equal with the assurance of diversity of program sources as a goal for public policy.

The consequences of such control over what may well become the primary medium of entertainment and information are serious in a society where the unimpeded flow of diverse information is held to be a fundamental requirement (Owen, 1975). As the Supreme Court has observed, "[T]he widest possible dissemination of information from diverse and antagonistic sources is essential to the welfare of the public" (*Associated Press v. United States,* 1945).

At present, most cable companies still have a limited channel capacity,[3] which tends to obscure the reach of their programming power. Even where the number of channels is large, cable companies tend to concentrate their present resources on the winning of new franchises and the construction of cable lines. They must also maintain a responsible image, lest their chances for additional franchises be injured elsewhere. None of these factors, however, will be long lived. In the future, the impact of this monopoly structure will become apparent through its economically inevitable consequences.

A. Intra-Medium Competition

The existence of monopoly conditions in cable television, prerequisite to the vertical programming policy that has been described in the previous section, is often denied with the argument that competition is possible and that it can act as a check on operators. Such competition, it is argued, takes essentially two distinct forms: either that of *intra*-medium rivalry among cable systems, or that of competition with related broadcast media such as commercial television and satellite broadcasting.

In New York State, for example, a recent governor's bill seeks to open each cable franchise area to additional cable companies, thereby reducing their local monopoly power. The possibility of such entry is based on the assumption that more than one cable company could successfully operate in a territory.[4] Such competition would not be sustainable if cable television distribution exhibits local monopoly characteristics. If significant economies of scale exist, it is unlikely that other cable companies would enter. This does not negate intra-medium competition completely. As Baumol (1977a, 1977b) and Panzar and Willig (1977) have pointed out, it is still possible that multiproduct firms would be able to enter successfully.

It is intuitively plausible that there are some economies of scale in some range; what is more important, however, is whether these efficiencies persist. If we define the production relation as the translog function (with Y the output and X_i labor and capital inputs)

$$(1) \qquad \ln Y = a_0 + a_1 (\ln X_1) + a_2 (\ln X_2) + a_3 (\ln X_1)(\ln X_2) + a_4 (\ln X_1)^2 + a_5 (\ln X_2)^2.$$

Marginal elasticities of production with respect to the inputs are then

$$(2) \qquad E_1 = \frac{\partial \ln Y}{\partial \ln X_1} \; a_1 + a_3 (\ln X_2) + 2a_4 (\ln X_1)$$

$$(3) \qquad E_2 = \frac{\partial \ln Y}{\partial \ln X_2} \; a_2 + a_3 (\ln X_1) + 2a_5 (\ln X_2).$$

The scale elasticity E is the sum of these marginal elasticities with respect to each input. E shows the percentage change in output associated with a percentage change *equal* in all inputs. E can be calculated for each output, assuming cost-minimizing production.[5]

For an empirical estimation of the equations established above we can rely on an unusually good body of information. The data cover virtually all 4,200 U.S. cable systems, and are composed of four disparate and extensive files—for technical and programming, financial, local community, and employment information (FCC, 1980a). The financial data include both balance-sheet and profit-and-loss type of information. Data refer to the year 1980.

Capital is defined as the flow of annual capital services. Three alternative measures for output are employed: "Subscribers Served," "Homes Passed," and "Total Operating Revenue."

The production function was estimated by using ordinary least squares over the translog function of equation (1). The elasticities results are given in Table I. These elasticities are, as can be seen, nearly always greater than one, and rising in size.

For large-sized operations (more than 100,000 subscribers), elasticities are in the range of 1.2, a result that is similar to most of those found for telephone services.

These results show that the average cost curve is not U-shaped but, beyond a small scale, decreasing with output. Average costs are continuously falling and marginal costs are consistently below average costs in the observed range. These are the economic symptoms of a natural monopoly situation.

The implications of these results are that large cable operations have cost advantages over smaller ones, and that these advantages increase with the disparity in size.

Table I
Economies of Scale and their Elasticity with Output

Subscribers			Homes Passed			Subscribers x Channels			Total Operating Revenue		
Y	E	n	Y	E	n	Y	E	n	Y	E	n
2,000	1.0046	.0966	2,000	.9686	.1196	10,000	.9327	.2827	500,000	.8432	.0674
5,000	1.0593	.0821	55,000	1.0353	.0946	50,000	1.0578	.1353	1,000,000	.9688	.0592
10,000	1.1246	.0688	10,000	1.1096	.0719	100,000	1.1373	.0966	2,000,000	1.0139	.0420
50,000	1.1721	.0650	50,000	1.1595	.0637	200,000	1.2192	.0765	5,000,000	1.0376	.0343
100,000	1.2197	.0624	100,000	1.2067	.0584	500,000	1.2758	.0687	10,000,000	1.0587	.0314

B. Intermedia Competition

The second potential form of competition to cable television is a rivalry with other video media. Because cable television is only one of several forms of telecommunications, its programming power may be limited by the need to cater to viewers' preferences in order to avoid losing them to another video medium.

On its face, the intermedia competitive argument seems powerful. However, a closer look at each of the ostensible competitors reveals that cable has significant technological and economic advantages.

Direct Broadcast Satellites (DBS), presently in the planning stage but close to realization (Billings, 1981) has in particular been touted as the major form of the future because it offers new viewing opportunities without requiring the expense of laying cable (Rice, 1980; FCC, 1980c, 1980d).

In its pure form, DBS permits subscribers to tune into programs that are beamed from stationary satellites.[6] To do so, DBS requires an antenna which is not inexpensive and which may not permit convenient reception of more than a few satellites. There are also limitations on the number of satellite broadcast channels because the scarcity of broadcast spectrum allocations (Levin, 1971) is aggravated by the wide reach of the signals and by the sky's overcrowding with satellites.

Another relatively new medium which has been heralded as a potential competitor to cable is multipoint distribution systems (MDS), a microwave technology (Comment, 1980; Glen, 1980). Its main use has been for pay television, and it is in this area that it is believed to create a viable alternative to cable. As with DBS, it seems unlikely that a large number of customers would go to the trouble and expense of installing microwave reception equipment to obtain a relatively small number of additional broadcast channels when cable can do much more at a comparable price or better.

Traditional television broadcasting is probably a more formidable competitor because it is well-established organizationally, economically, and politically, has access to almost every American home, and is free of charge. But it, too, suffers from the scarcity of spectrum that, in connection with the FCC's policy favoring localism in broadcasting, limits most cities to a handful of VHF and UHF stations (Levin, 1971; Schuessler, 1981). Also, in many areas of the country the reception of broadcast signals is generally poor in quality. After all, it was precisely in order to alleviate these limitations of traditional broadcasting that cable television and distant signal importation were developed (Barnett, 1970).

Even more important, however, are other advantages of cable technology: its two-way capability, its ability to impose a pay-per-view fee structure, and its potential to "narrowcast."

Two-way capability means that a viewer has the ability to return signals "upstream" to the cable system. On the program distribution level, a two-

way system makes per-program billing for television viewing feasible, in the same way that telephone companies charge for toll calls. Its commercial potential is great, since consumers can respond to advertising messages instantaneously by pushing buttons to make an order and to transfer funds in payment. Cable's two-way capability also makes possible services such as alarm systems, meter reading, electronic banking, videotex and data information, classified ads, and many more.[7] Consumers will therefore benefit from two-way cable as a communications medium quite apart from its entertainment content, and commercial users would subsidize such access to consumers by their payments to the cable operator. Hence, it is to the economic advantage of the cable operator to connect as many households to a cable system as possible, and at a fairly low basic charge or even without charge,[8] just as over-the-air broadcasting is free in order to induce its consumption as a vehicle of advertisting services.

The cost advantages of "free" broadcasting over cable may therefore disappear, and nearly every household is likely to have a cable television connection. With cable reaching most households, conventional broadcasting may be reduced to a supplementary role, providing a handful of channels independent of the cable operator, and reaching rural areas where the laying of cable is uneconomical.

A second advantage which cable affords over traditional television is that it permits the operator to impose a charge for the viewing of specific programs. The possibility of such per-program pay-cable revolutionizes the program offering on cable because it permits programs and services with much higher production budgets. In regular broadcasting, viewers benefit from a significant consumer's surplus, i.e., they get a program for free (or, more accurately, for the value of their time in which they subject themselves to advertising messages) where they would often have been willing to pay for the viewing.

The other side of the coin of "free" television is that certain types of programs are unavailable because advertising does not generate sufficient revenue to have them produced or aired. With cable, however, such programs could become available on pay-television to a nationwide audience. Indeed, one can expect the more desirable programs, i.e., those whose consumer surplus is highest, to be largely siphoned from free television and moved to pay-television.[9]

Although pay-television is not strictly confined to cable, as a result of cable's technical advantages other media's versions of pay-television are unlikely to be viable competitors. Over-the-air broadcasting has developed "Subscription Television" (STV), permitting the transmission of scrambled signals, which subscribers unscramble with a rented device. Because STV requires a regular broadcast channel, it is faced with the usual problem of VHF spectrum scarcity, or relegation to the less desirable UHF band. In all likelihood, STV's significance is transitional rather than permanent. It can

serve as an outlet for pay-TV programs where cable has not been franchised or laid. The alternative forms of pay-television are further handicapped in competing with cable because they lack the two-way technology which enables cable operators to easily impose a practical per-program billing. This type of pricing, which is more sophisticated than the monthly per-channel flat charge for STV, DBS and MDS (or its cumbersome substitutes that involve the physical distribution of a per-event filter), permits two-way cable operators to offer a more varied program.[10]

In summary, cable's unique technical features—its facilitation of narrowcasting, per-program charging, and price differentiation among different audiences, coupled with the fairly large number of channels and their close association with supplementary communications services—provide it with a solid economic foundation unmatched by any of the broadcast media. Cable television is thus superior to broadcasting—in its conventional, satellite and microwave varieties—in terms of technology, commercial potential and viewer satisfaction, without being unreasonably expensive to install and provide.[11]

II. THE REGULATION OF LOCAL CABLE DISTRIBUTION

If, as has been argued, neither intra- nor intermedium competition are likely to significantly affect the local distribution monopoly of cable television with its associated program control, what should be the proper direction of public policy? The following sections will deal with alternative proposals of cable regulation, ranging from the imposition of a common carrier status to public ownership and program regulation.

A. Common Carrier Status

The conceptually most clear-cut way to respond to a local monopoly in cable programming is to separate a cable company's distribution role from its programming function. Under such a "separations policy,"[12] cable system operators act solely as conduits for the programs of others without control over the nature or content of programs. For a fee they would have to offer non-discriminatory "access" to all comers. The function of cable operators would then become similar to that of telegraph or telephone systems—i.e., that of a common carrier.

Such separations policy has been advocated by groups as diverse as the American Civil Liberties Union (Powledge, 1972; *ACLU v. FCC,* 1975) and the Nixon White House. The latter led, after the 1974 Report of the White House Office of Telecommunications (The Whitehead Report),[13] to an unsuccessful 1974 draft bill requiring one for-lease channel for each channel controlled by a cable operator.

A common carrier status for cable, advocated by many access-oriented public interest groups as well as by independent program suppliers (Huffman, 1982), as conceptually neat a solution as it may appear, would create new problems. Foremost among them would be the necessity for a regulation of the rates that are charged to program suppliers for access to a channel.[14] This regulation of *access* rates should be distinguished from that of subscriber charges, although the two rates are somewhat related, because the higher the charges to consumers, the lower access rates may become. As an unregulated common carrier facing a large demand for channel time, an unconstrained cable operator could act as a classic monopolist, i.e., able and willing to restrict the supply of channels between customers. Many advocates of a common carrier status overlook the need for rate regulation. Yet, one must realize that the abolition of a vertical extension of monopoly deals only with a *symptom* of power, and does not eliminate the power itself; the latter will, if otherwise unconstrained, find expression in other monopolistic behavior, such as higher prices, smaller offerings of channels, or price discrimination.[15]

The emergence of rate regulation would create major new problems (Lieberman, 1971). Historically, rate regulation is easiest to administer where the product can be clearly defined and quantified and where the industry is relatively stable; the provision of water or electricity are good examples. Rate regulation is much more difficult when it deals with complex and variable mixtures of services or where the regulated industry is extremely dynamic in its development, as is the case with cable television. Administratively, rate regulation is patterned on considerations of rate base, rate of return, and allowable expenses, a highly complex accounting scheme not to be lightly extended into another sector of the economy (Ross, 1974).

If a cable operator had common carrier status, its vertical transactions with an affiliated program producer or syndicator would also have to be regulated to avoid unfair competition.

At the same time, rate regulation gives governments the potential to influence programming content. In order to encourage the showing of programs that are socially desirable from the regulator's perspective, lower rates for their access may be instituted. This is a public policy of questionable wisdom and practicality, given the multitude of worthy causes that will emerge with some legitimate claim.

Cable companies are extremely concerned about the prospect of common carrier classification, which may deny them the desired status of "video publishers."[16] Thus they have consciously refrained from offering some services which may invite the dreaded common carrier status (Hatfield, 1981). In one instance a New York City cable company successfully offered banks cable transmission of data, but modified its service when the New York State Public Service Commission started to consider whether this was a common carrier service subject to tariff (Kalba, 1977).

B. Public Ownership

A second way to deal with the local monopoly of cable operators would be to substitute public for private ownership. Under such a policy, the physical cable system would be owned by a local or state authority. While the selection of programs could be subcontracted to a private company under some policy guidelines imposed by the municipality, a more likely course would be to vest programming decisions in an independent board of public representatives. However, because of the reluctance to give a governmental body —however independent it may be—powers over program selection, proposals for public ownership are often coupled with a common carrier proposal. Public ownership exists at present for thirty-six small cable systems (Cable, 1981). St. Paul, Minnesota recently adopted the concept for public ownership in principle, though the proposal was defeated in a subsequent referendum.

Among the attractions of public ownership, aside from local control and the potential diversity of programming sources, is its potential as a revenue source (Bryan, 1972). Under the current law, local governments are precluded from imposing franchise fees at a rate above five percent of revenues.[17] Hence, public ownership can be a way to increase revenues from the potential riches of cable TV, either by a direct city operation or by its lease to a private operator.

The most obvious problem with public ownership is government's traditional inefficiency in running a business operation. Cable television is a complex and rapidly changing technology. It is not easy to develop, run, or adapt. New developments occur practically daily. As an industry, it seems to be far better suited for the special skills of private managers and risk-taking investors, rather than those of local civil servants. Of course, when the technology has matured, operation by a public entity may be more practical, but that day is far off.

A second major problem with public ownership is the potential politicization of programming and access allocation. Political struggles may accompany every controversial program, and programming decisions by a city authority may create First Amendment problems (*Barnstone v. University of Houston,* 1980).

C. Programming Regulation

In contrast with a separations policy and public ownership, which are both *structural* approaches to the cable monopoly problem (Owen, 1979; Fisher, 1966), an alternative policy would be the regulation of programming *conduct* (Noll, et al., 1973; Levin, 1980). To the extent that a governmental policy on diversity can be detected at all today, this is the direction taken.

It is relatively easy to mandate the carrying of existing broadcast stations. But when it comes to the allocation of the remaining channels among the multitude of potential program suppliers, governmental guidelines may be either oppressive in their interference or meaningless in their generality. Perhaps the easiest way to proceed would be to institute rules restricting the percentage or the number of channels that may be filled with the programs of companies affiliated with the cable operator. While such a system would open the remaining channels to outside suppliers, their selection would raise the same questions previously considered. Either the cable operator could exercise monopoly power in the granting of and charging for access, or rate regulation would become necessary. An alternative form of regulation would be to mandate a certain program mix. Yet this would place a governmental body squarely in a programming role and, furthermore, would leave unsolved the problem of diversification of program *sources.*

One existing diversity regulation is the FCC requirement, often also incorporated into franchise agreements, that cable operators carry all existing over-the-air television stations in the area of cable operation (47 C.F.R. §§ 76.51–76.65 (1980)). However, the future of this access should not be taken for granted. With the growing availability of programs for which subscribers will pay, the free ride of broadcasters will become a burden to cable companies. Hence, cable operators are about to challenge this "must-carry" rule and other program provisions as violations of cable companies' First Amendment rights.

Another present diversity-regulation is the frequent local or state requirement to provide channels for the "public access" of any not-for-profit user, and for commercial "leased access." The idea behind public access is to exploit the local distribution characteristics of cable by making it an outlet for local creativity and opinion, a form of an "electronic soap box." However, when the profitability of channel-use by commercial users increases, the number of not-for-profit and low budget "free" public access channels may well be curtailed for reasons of high opportunity costs. Neither has leased cess been successful so far. The use of such access has not been granted liberally by cable operators, since the programs may be in direct competition with the operators'. In addition, operators are concerned with liability for pornographic or libelous content over which they have no control. They are also concerned with antitrust problems if they cannot grant access to all comers. Discouragement of leased access may take place, for example, by lack of promotion, unavailability of posted rates, and the setting of large minimum blocks of time that must be leased.

One issue that must be considered in the regulation of cable television is which level of government ought to have the regulatory authority. The federal authority exercised by the FCC is derived from its regulatory function

over broadcasting and has been upheld in a number of judicial decisions. However, the last few years have seen an increasing federal disengagement from cable regulation, as evidenced by the FCC's abolition of regulations on distant signal importation, program exclusivity, and pay-cable (*Home Box Office v. FCC,* 1977; *Malrite TV v. FCC,* 1981). Clearly, detailed controls over thousands of cable systems would also be a major administrative burden for which a centralized federal agency may not be well equipped. While a federal policy agency usually means a nationwide uniformity, the need or desirability for such uniformity is not obvious.

Because cable is franchised largely on a local basis, local governments have become a logical locus of regulation, both by setting conditions in their franchise contracts and by the continued supervision of the contract's fulfillment. Yet local governments are usually woefully unequipped for the task.

Overall, while some regulatory role may remain with both federal and local levels of government, the state level of government appears to be the best locus of cable regulation as a compromise between the proximity of local government and the expertise of a federal agency (Braunstein, 1978, 1979). However, while some states have instituted cable commissions, mostly to provide local government with expertise, at present the role of states is quite limited (LeDuc, 1975; Jones, 1970).

In conclusion, regulatory actions to insure diversity in programming have not been particularly successful in their outcome and have raised the problem of governmental interference with mass communications.

III. OPENING CABLE TO COMPETITION BY TELEPHONE COMPANIES

The preceding sections have demonstrated the limitations of various approaches to counteracting the local monopoly in cable television sources. They have also shown the limitations of a policy based upon expectations of intra- or intermedia competition.

What public policy alternatives then remain to check this emerging monopoly power? An entirely different policy approach is to encourage a different form of competition with the cable transmission medium itself—by ending its sheltered existence apart from the other wire system which also reaches into almost every home: the telephone. Thus each telephone company ought to be free to provide cable service as a common carrier in the areas of its telephone service, provided, however, that a well-established cable company is already operating in that area. In return, all cable companies would be free and encouraged to provide communication services which were heretofore in the domain of telephone companies, and to inter-

connect with the new long distance carriers, thus creating additional nationwide networks. This policy must be distinguished from permitting a telephone company to enter the cable business as an *initial* competitor for a cable franchise, rather than permitting such entry only after an independent cable company is already established. Currently, local telephone companies are precluded from providing cable television service in the area of their telephone service, with possible exemptions for those rural area which no cable company serves. The reason for this prohibition is that in a contest to win a cable franchise, a telephone company would have strong economic advantages. It already runs a wire into most homes, has utility poles and underground ducts in place, and possesses competent and experienced technical and customer service personnel. For a transformation of "narrow-band" telephone transmission into "broadband" cable transmission including video channels, one would have to replace the regular telephone wiring by a coaxial cable or optical fiber, a move that would also considerably increase the potential of telephone communications. Such upgrading by the use of optical fiber is already part of telephone companies' long-range planning.

From the government's point of view, a major reason for the exclusion of telephone companies from cable television service had been the predominance of one company, the American Telephone and Telegraph Company, over national wire communications. Thus, even before the advent of cable television, regulators have long felt that the Bell System is too powerful and too difficult to control, and that its ability to cross-subsidize an unregulated non-telephone operation by shifting part of its costs into the expenses of the regulated telephone service permits it to compete unfairly in unregulated markets.

Therefore, before the recent 1982 consent decree, AT&T's entry has also been restricted by the previous 1956 decree which barred it from engaging in "any business other than the franchising of common carrier communications services."

The prohibition of cross-ownership has permitted, and indeed nurtured, the establishment of cable companies as a second type of communications monopolist, carefully kept apart from the existing telephone monopoly. However, the logical pro-competitive policy would be the exact opposite; it would permit telephone companies to provide cable service in *competition* with existing cable companies, and at the same time would permit the latter to use part of their broadband spectrum for switched voice transmission, i.e., telephone service. Under such a system, cable and telephone services would cease to be monopolists in their respective communications submarkets and would instead have to compete with each other in an integrated and larger market.

Although by having a single carrier (such as a telephone company) provide all communications services one reaps the economies of large scale and

avoids some duplication of facilities, such advantages are static in nature, i.e., production may be efficient within a given technology, but the latter does not necessarily advance as rapidly as it would in a competitive system. By pitting larger carrier systems against each other one encourages a dynamic development of technology and applications, and at the same time reduces the need for regulation.

Granting a cable company an "infancy" period permits it to become established and ready for competition with the powerful telephone companies. To assure this readiness, a precondition for entry by a telephone company could be that a certain percentage of households have become subscribers of cable television.

There may be instances, however, in which the entry of a telephone company will lead to the demise of a cable operation. In these instances, as long as no unfair competitive practices were employed, it stands to reason that an integrated broadband service provided by the telephone company is the more efficient way of video transmission. Such efficiencies, where they exist, ought not to be artificially restricted.

One should not be pessimistic, however, about the future of the cable industry under competition. Many of the leading cable companies have an excellent record of innovation, and they should be able to hold their own against the slower moving telcos. And if some operators fail, they could be acquired by the more successful companies, which would then realize the economies of large scale.

The other side of the coin, if barriers between telephone and cable are removed, is the opening of telephone services to cable operators. There is enough room on a standard coaxial cable to carry thousands of simultaneous voice or data channels in addition to the video offerings. There is nothing in the cable technology that restricts it to video transmission as opposed to a mixed telephone and video service, although switching equipment would have to be installed and network architecture would have to be altered. Broadband cable systems that can provide a mix of communications services have already been developed. Recently, a cable company proposed a telephone-cable system for Prince Georges County, Maryland, which would include switching capabilities and voice, video, and computer circuits. In New York and San Francisco, banks are already using cable to move data between their different facilities, a function previously filled by the telephone company. These new local distribution networks could interconnect for long distance service with cable networks in other localities, and they could be interconnected either via the separated AT&T Long Lines, or via the new long distance carriers such as MCI or Southern Pacific. The latter companies are at present involved in long distance transmission only, without a local distribution network. Their combination with cable systems would therefore complete one or more nation-wide non-Bell network.

Permitting the telephone companies to provide an alternative video transmission service would also solve several problems. Most importantly, the presence of an alternative source of viewing fare would remove the problem of a local cable monopoly over programming. The alternative telephone cable system would operate as a common carrier, permitting access to anyone who could afford the access fee. Telephone companies are comfortable with this status since it is their traditional mode of operation. Conventional cable operators would continue in their present dual roles of distributor and programmer, although they could provide unregulated common carrier channels as well.

A competitive setting would also eliminate the need for regulating the rates that are charged by cable operators to suppliers of the programs. Provided only that no collusion takes place, the easy availability of an alternative cable service should keep access rates moderate.

IV. CONCLUSION

A system of two initially distinct media—cable television and telephone—checking each other is the by-product of new technological developments and initial regulatory responses. The entry of cable television into the American household was not planned as part of an alternative telecommunications system. But now that it is becoming a fact, one should make the most of it. Cable companies will be capable of providing switched communication, i.e., some form of telephone services, and it will be difficult to preclude them for long from selling these services. Similarly, with the introduction of optical fiber connections to households, telephone companies will have the technical capability to provide video service, Again, it will not be feasible to contain the possibilities of the technology and to deny their services to consumers. If technology is destiny, it spells out a future of integrated telecommunications. Where once television and telephone were very different, they have become increasingly related as alternative uses of available communication channels. It is therefore senseless to cling to market definitions of yesterday and to restrict companies to one or the other of these markets. As markets integrate, competition should not be contained. In this case, such integration provides the key to a structural solution to thorny monopoly issues in telecommunications and, in particular, to the gatekeeper power of cable television operators over television programming.

V. FOOTNOTES

[1] Given the scarcity of superior talent and outstanding programs, an increase of programs ought to lead to an increase in their price. A monopolist thus faces an upwardly sloping supply curve.

[2] The FCC's staff analysis would hold only if the cable operator could discriminate perfectly, or at least in a way that makes the buyer better off than vertical integration would, or if increasing marginal costs are *entirely* due to scarce factor rents, i.e., if no surplus exists.

[3] Almost 3,000 of the approximately 4,300 systems have capacities of 12 channels or less (*Television Digest,* 1980).

[4] Competitive cable television services (known in the industry as "overbuild") exist in less than ten franchises out of 4200, and are usually caused by disputes about the scope of the initial franchise award. Of these operations, only those in Allentown, Pennsylvania, and Phoenix, Arizona, are of appreciable size. (*TVC,* 1981). Subscriber rates in Allentown are above the national average.

[5] A production function approach, as opposed to the use of cost function, is chosen for two reasons: first, the application of a cost function requires the restrictive assumption of cost-minimalization. Second, the data is available for the inputs, whereas the factor prices necessary for a cost function require conjecture.

[6] It is also possible for these signals to be received by a cable operator and distributed over his lines. In such a case, DBS does not differ in principle from other means of program delivery to a cable company.

[7] Theoretically, two-way operations could also be set up through a combination of conventional broadcasting and telephone. However, this seems impractical for most applications. A recently proposed "hybrid" of broadcasting and telephone is conceived by its proponents as primarily for non-cable areas (*Communication News,* 1981).

[8] Several of the recently submitted plans by applicants for New York City's franchises include a free basic service. Similarly, Boston's recently awarded franchise went to a company that set a monthly subscription price of $2 for 52 basic channels. (*Multichannel News,* 1981a).

[9] The 1981 world championship welterweight fight between "Sugar Ray" Leonard and Thomas Hearns was a cable success at $15–20 per household viewing, grossing $6 million in California alone (*Cable Age,* 1982).

[10] For the above-mentioned Leonard-Hearns fight, non-interactive cable systems had to provide throw-away unscramblers for once-only viewing in order to make a per-event charge possible. Most operators found this too costly. (*Multichannel News,* 1981c).

[11] The cost of initial installation of cable is higher than those of pay-broadcasting, but not significantly so, considering its range of services. It has been estimated by an industry panel at $400 per household, up to a 50 percent cable penetration, vs. $165 for STV, $200–300 for DBS, and $75–115 for MDS (*Multichannel News,* 1981b).

[12] The term "separations policy," frequently used interchangeably with that of "common carrier status" (though the two are not identical; see, e.g., Nadel (1982)) is an imprecise term because it does not specify where, in the totality of functions which a cable operator fulfills, the cut-off between distribution and programming lies. Furthermore, a separation may actually exist under a cable company's total control over programming, as long as some other entity owns or manages the technical facilities, e.g., a telephone company.

[13] The private power of the cable system operator is potentially great, because of the local monopoly characteristics of cable. Unless restrained in some manner, the system operator could control all of the channels of his cable system, which could constitute the bulk of the channels of electronic communications in a particular locale.... Cable's multi-channel technology, together with the economic imperatives of a medium concentration of power that is a natural monopoly, could lead to an even greater concentration of power than exists in broadcast television. When a single cable operator has the power to control the programming and information content of all the channels on his system, his monopoly power over the cable medium of expression is nearly absolute. Therefore, detailed and prescriptive regulation by Government is well on its way.... The only way to avoid the broadcast regulatory model and allow cable to develop as a medium of communications open and available

in a manner similar to the print or film media is to preclude the vertical integration of the programming and distribution function in cable. In this way, the cable operator's distribution monopoly would not produce any concentration of power over free expression in the use of cable channels and would offer no pretext for Government control of programming or other information distributed by cable. (Cabinet, 1974).

[14] One alternative separations policy which would not require rate regulation would be to let market forces determine the price of a channel by auctioning off its use, with part or most of the revenue going to the municipality. This proposal, advanced earlier by the author, could reduce the private monopoly profit of the cable operators (and its incentives) by transferring it to the public (Noam, 1981). See also Nadel (1982) proposing a common carrier structure which would avoid rate regulation.

[15] Simply moving a channel from one service tier to another can make a major difference in its success.

[16] They have gained support for this status from the FCC chairman Mark Fowler (1982) and Senate Commerce Committee chairman Robert Packwood, who has advocated a constitutional amendment to this end (*Broadcasting*, 1982).

[17] 47 C.F.R. §§ 76.34. See Smith (1975).

VI. REFERENCES

ACLU v. FCC, 523 F.2d 1344 (9th Cir. 1975).

Associated Press v. United States, 326 U.S. 1, 20 (1945).

Barnett, S. (1970). Cable television and media concentration, part I: Control of cable systems by local broadcasters. *Stanford Law Review 22,* 221–329.

Barnstone v. University of Houston, 54 F. Supp 670 (S.D. Tx 1980).

Baumol, W. J. (1977). On the proper cost test for natural monopoly in a multiproduct industry. *American Economic Review 67,* 809–822.

Baumol, W. J., Bailey, E. E., and Willig, R. D. (1977). Weak invisible hand theorems on the sustainability of multiproduct natural monopoly. *American Economic Review 67,* 350–368.

Billings, A. (1981). "Direct Broadcasting Satellites and Impact on Other Technologies." (Paper delivered at 9th Annual Telecommunications Policy Research Conference, Annapolis, MD.)

Braunstein, Y., Kalba, K., Levine, L. (1978). "The Economic Impact of State Cable TV Regulation," pp. 78–87, Cambridge, MA: Harvard University Program on Information Resources Policy.

Braunstein, Y. (1979). Economic effects of state regulation of cable television. *In* J. Dordick (Ed.), *Proceedings of the Sixth Annual Telecommunications Policy Research Conference.* Lexington, MA: Lexington Books.

Broadcasting (1982). (April), p. 30.

Bryan, M. (1972). The new pot of gold: Cities look at cable TV communications. *TV Communications* (May), 52–54; 107.

Cabinet Committee on Cable Communications, Office of Telecommunications Policy (1974). "Cable Report to the President." Washington DC: Government Printing Office.

Cable Age (1982). (February 8), 27–32.

Co-franchising: Boom or Bane? (1981). *TVC.* (December 1), 68–81.

Communication News (1981). (September), p. 9.

Federal Communications Commission. Cable Bureau. (1980a). Physical System, EEO, and Financial Files. Washington, DC: FCC.

Federal Communications Commission. Network Inquiry Special Staff. (1980b). "New Television Networks: Entry, Jurisdiction, Ownership and Regulation." Washington, DC: FCC.

Federal Communications Commission. (1980c). "Policies for Regulation of Direct Broadcast Satellites." Washington, DC: FCC. (Staff Report)

Federal Communications Commission. OST. (1980d). "Technical Aspects Related to Direct Broadcast Satellite Systems." Washington, DC: FCC. (Technical Report).

FCC v. Midwest Video Corp., 440 U.S. 689 (1979).

Fisher, F. (1966). Public regulation: The impact of changing technology. Community antenna television systems and the regulation of television broadcasting. *American Economic Review 56,* 320–329.

Fowler, M. (1982). Untitled article (cited in *Broadcasting* 1982, forthcoming in *Texas Law Review,* Spring 1982).

Glen, A. (1980). Multi-Point Distribution Service (Report to the FCC Network Inquiry Special Staff).

Hatfield, D. (1981). "Local Distribution—The Next Frontier." (Paper delivered at 9th Annual Telecommunications Policy Research Conference, Annapolis, MD.)

Home Box Office v. FCC, 567 F.2d 9 (D.C. Cir. 1977).

Huffman, G. (1982). Pressure grows for law requiring leased access. *Multichannel News* (March 8), p. 1.

Jones, W. K. (1970). "Regulation of Cable TV by the State of New York." (Report to the Commission.)

Kalba, K. (1977). "Separating Content from Conduit?" Cambridge, MA: Kalba Bowen Associates.

LeDuc, D. (1975). Control of cable television: The senseless assault on state's rights. *Catholic University Law Review 24,* p. 798.

Levin, H. (1971). "The Invisible Resource." Baltimore, MD: Johns Hopkins Press.

Levin, H. (1980). "Fact and Fancy in Television Regulation—An Economic Study of Policy Alternatives." New York: Russell Sage Foundation.

Liberman, H. (1971). Common carrier, CATV: Problems and proposals. *Brooklyn Law Review 37,* 533–549.

Malrite T.V. of N.Y. v. FCC, 652 F.2d 1140 (Cir. 2 1981).

Multichannel News (1981a). August 24, p. 1.

Multichannel News (1981b). September 7, p. 7.

Multichannel News (1981c). September 21, p. 1.

Nadel, M. (1982). "Comcar: A Free Market Cable Television Structure." (Unpublished manuscript.)

Noam, E. M. (1981). "Opening up cable TV." *New York Times* (March 19), op. ed. page.

Noll, R., Peck, M., and McGowan, J. (1973). "Economic Aspects of Television Regulation." Washington, DC: Brookings Institute.

Owen, B. (1975). "Economics and Freedom of Expression." Cambridge, MA: Ballinger.

Owen, B. (1979). Structural approaches to the problem of television network economic dominance. *Duke Law Journal,* 191–194.

Panzar, J. C., and Willig, R. (1977). Free entry and the sustainability of natural monopoly. *Bell Journal of Economics 8,* 1–22.

Powledge, F. (1972). "An ACLU Guide to Cable TV." New York: ACLU.

Rice, D. (1980). Regulation of direct broadcast satellites: International constraints and domestic options. *N.Y.L.S. Law Review 25,* 813–862.

Ross, L. (1974). "Economic and Legal Foundations of Cable Television." Sage Research Papers in the Social Sciences #90-012.

Schuessler, T. (1981). Structural barriers to the entry of additional television networks: The Federal Communications Commission's spectrum management policies. *University of Southern California Law Review 54,* 875–1000.

Smith, D. (1975). Local taxation of cable television systems: The constitutional problems. *Catholic University Law Review 24,* 755–776.

Sucherman, S. (1971). Cable TV: The endangered resolution. *Columbia Journalism Review* (May-June), 13–20.

Television Digest (1980). Television Factbook Vol. 49 (No. 2), 861.

The Buffalo shuffle: TMD gains, HBO loses in channel shift. (1981). *Multichannel News* (September 14), p. 40.