THE FUTURE OF CABLE TELEVISION:
SOME PROBLEMS OF FEDERAL REGULATION

Leland L. Johnson

A Report prepared under a Grant from
THE FORD FOUNDATION

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Throughout the history of television the Federal Communications Commission has been centrally concerned with promoting diverse sources of programming, including local programming attuned to individual community needs. Its task has been difficult because the severe constraints on the number of channels available for over-the-air broadcast and the almost exclusive reliance on advertiser revenues for financial support have forced an evolution of the industry geared overwhelmingly toward the mass national audience.

In more recent years, the rapidly growing cable television industry has attracted much attention. It offers many more channels than can be made available through over-the-air broadcast, and it provides a means of securing revenue through subscriber fees in addition to advertiser revenues in order to support greater diversity at both local and national levels. In the near term cable offers prospects of a far wider range of educational, instructional, cultural, and recreational programming catering to small audiences as well as to the large. In the more distant future, cable may offer a host of new services such as facsimile reproduction in the home and office of newspapers, books, mail and other documents, computer links for information storage and retrieval, and municipal surveillance for fire detection, traffic control, and protection against crime.

The very promise of cable, however, generates new conflict. Some fear that growth of cable, carrying additional channels in competition with broadcasting stations, could jeopardize both commercial and non-commercial service — to the detriment of those forced to pay through cable subscription for programming they otherwise would obtain free, and restricting or eliminating service to those in sparsely populated areas uneconomic to supply by cable. Moreover, such an expanded role of cable carries the danger that the cable operator will have excessive control within his franchise area over channels of information and the conditions under which it is made available to the viewer.
Because of the profound importance to the public of the evolution now taking place in the television industry, the Ford Foundation has made a grant to The Rand Corporation to undertake research dealing with the future of cable television. This is the first Memorandum in a series. It deals with problems of designing well-conceived regulatory policies in the light of the prospects and conflicts posed by the future growth of cable television. Perhaps its most significant conclusion is that the prospects are good for permitting cable to grow under liberal FCC rules, without endangering the viability of either commercial or non-commercial broadcast.

Other Memoranda to follow will include additional analysis of the potential impact of cable television on broadcasting, and cover such additional topics as the economics and technology of program origination on cable systems; problems of franchising and regulating cable systems at the state and local level; and use of cable for educational purposes, especially in higher education.

The author gratefully acknowledges the excellent comments on earlier drafts by a number of readers, including those of Franz Allina, Ben Bagdikian, Leonard Chazen, David Davis, Nathaniel Feldman, Jack Hirshleifer, Edward Park, Richard Posner, and Leonard Ross.
SUMMARY

The Federal Communications Commission has faced a difficult task in seeking to make available to the public a large number of national, regional and local television program sources. The number of channels in the very-high-frequency range (VHF) is severely limited because of the large bandwidth required for each channel. Since the early 1950s, the FCC has attempted to promote more diversity in programming by allocating channels in the ultra-high-frequency region (UHF) of the radio spectrum in addition to those previously allocated in VHF. However, owing to certain economic and technical difficulties, growth of UHF broadcasting has fallen below earlier expectations; even in the absence of cable television its future would be unclear.

The emergence of cable television serves both to increase the number of channels and to provide additional sources of financial support for a range of programming going far beyond what is broadcast over the air. However, the potential of cable to bring additional channels into markets already served by television broadcasting stations would add seriously to the competitive pressure against these stations. Some fear that the very existence of "free" television would be jeopardized, to the detriment both of those who would be forced to pay through cable subscription for service they now receive without charge, and of those who live in sparsely populated rural areas uneconomic to supply by cable. Moreover, such an expanded role of cable, by its very importance, carries the danger of the single cable operator having excessive control, within his franchise area, over channels of information and the conditions under which it is made available to the viewer.

Dealing with the regulatory issues emerging from these conflicts, this study addresses: (a) conditions under which cable operators should be permitted to carry signals from distant and local broadcasting stations — in particular, the effects of requiring cable operators to pay for the right to carry these signals, in contrast to the present nonpayment system; (b) the extent to which cable systems
should be permitted or required to originate programming, to sell advertising, and to provide channels on a common carrier basis to outsiders desiring access to the television medium; and (c) the extent, if any, to which broadcasting stations should be protected or compensated as a consequence of the competitive threat posed by cable.

Largely as an historical and technical accident, cable systems carry signals from local and distant broadcasting stations without payment to the stations or to copyright owners of the programming. In the future, unrestricted use of distant signals without payment could erode the sources of financial support for television programming. Moreover, payment by cable operators for programming brought in via distant signals can be justified by the fact that they and other users currently pay for alternative acquisition of the same programming. (For example, no one would question the responsibility of the cable operator to pay copyright for a film he replays over his cable, as an alternative to gaining access to the film by way of a distant broadcast signal.) Their contribution to program support in this way would help cable subscribers and non-subscribers alike to obtain a wider range of programming than would otherwise be available. (The case for payment for local signals is less clear, because cable operators are compelled to carry them under current FCC regulations.)

Serious objections to such payment are frequently raised on grounds that cable operators would be forced to pay exorbitant fees. This concern is based partially on the fact that program production and distribution are concentrated in few hands, combined with the fear that the long-term "exclusivity" agreements for use of particular programs, typically made between producers and powerful broadcasting stations, would tend to shut cable operators out of the market for the most attractive programming. However, if the problem of unreasonably restricted access is serious (this study develops no evidence one way or the other), it is serious for other means of obtaining programming as well -- both by cable operators for their own originations and by the less powerful broadcasters (especially UHF). In this case, the appropriate solution would appear to be either antitrust action
on the part of the Department of Justice, or legal limitations on
periods of program exclusivity -- not the singling out of distant
signals for special concessionary treatment.

With respect to cable operators originating programming and
selling advertising, it is important to distinguish -- which was not
done in a recent FCC ruling -- between local live (or delayed-playback)
origination and the playback of non-local recorded programming brought
in from the outside. Requirements to originate programming and per-
mission to sell advertising are more clearly justified for the former
category than for the latter.

Originations by cable operators raise the serious issue of the
degree to which they are to control the flow of information into the
home. In attempting to limit this control, the FCC would do better
to restrict cable originations to a given percentage of total pro-
gramming than to one channel, as it now proposes. Use of common
carrier channels would also serve to diversify control, but at the
expense of the regulatory burden involved in controlling pricing
practices, in ensuring non-discriminatory access, and in overseeing
program content. In the near term, provision by cable operators for
common carrier channels should be encouraged, with perhaps one or a
few experimental cable systems operating on a full common carrier
basis.

In general, this study suggests that, subject to payment for
distant signals (and perhaps for local signals as well), cable systems
should be permitted to grow under liberal rules: employing distant
signals without restriction; originating both local and non-local pro-
gramming; selling advertising, at least on local-origination channels;
and interconnecting into regional and national cable networks.

It is true that the growth of cable under such liberal rules
can pose a threat to broadcasting in the competition for audiences,
programming, and advertiser revenues. However, the fact that radio
broadcast has continued to grow in the face of competition from tele-
vision suggests that flexibilities exist in the broadcasting industry
which would cushion the impact of cable competition. Moreover, the
fact that cable has experienced more extensive growth in metropolitan areas of Canada than in the United States without a perceptible effect thus far on Canadian broadcasting revenues, suggests that some leeway exists for competitive coexistence of the two modes.

More significant is the fact that the growth of cable may have "complementary" as well as "competitive" effects on broadcasting. By paying for broadcast signals and by purchasing programming for their own originations, cable operators would in effect share the costs of programming with broadcasters, in the same manner that movie theatres and television today share the cost of producing movie film. Although broadcasting revenues may decline, as a result of the competitive effects, the costs of broadcasting may also decline, as a result of the complementary effects. Of central importance is the fact that the cost of installing and operating a broadcasting station is only a small part of total broadcasting cost. Far more important are the cost of programming, and the combination of general, administrative and advertising selling expenses. Substantial leeway exists for sharing the burden of these costs with cable operators, so that it would remain profitable for broadcasters to continue, or even to expand, their operations.

Moreover, if the threat of cable were to become serious in the future, and protection was deemed to be in the public interest, some forms of protection would appear more promising than others. The less promising approaches involve the kinds of restrictions now being widely debated -- restrictions on the number and type of distant signals carried by cable, and prohibitions on cable originations or cable network interconnection for programming of a type competitive with that offered by broadcasters. Such questionable restrictions would extend blanket protection to the strong and highly profitable VHF stations in major markets, as well as to weak ones, irrespective of the actual threat posed by cable to both.

More promising are approaches that strengthen the complementary effects between cable and broadcasting rather than those aimed directly at reducing the competitive effects. One possibility is a legal
limitation on periods of exclusivity on program use which would serve as a means of protecting weak broadcasters not only against cable competition but against the competition of powerful broadcasters as well. A more complex approach would involve a compulsory license to broadcasters that would assure them of access to programming under concessionary terms. Another possibility would involve limited use of FCC's anti-siphoning rules, already adopted with respect to over-the-air pay television.

With respect to non-commercial broadcasting, payments by cable operator for the non-commercial signals they carry could provide substantial additional financial support to offset the competitive effects of cable. Moreover, the use of cable for a wide range of instructional and educational programming, infeasible with today's broadcasting, may provide new opportunities to non-commercial broadcasters to employ their talents and technical facilities in a manner that would place non-commercial broadcasting on a far firmer footing than it is today.
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I. INTRODUCTION

FCC POLICYMAKING AND THE GROWTH OF TELEVISION BROADCAST

The impending commercial growth of television at the end of World War II soon made it apparent that the Federal Communications Commission would face serious difficulties in pursuing policies that had earlier guided the growth of radio broadcast. In the first place, the FCC had held to the policy of promoting numerous sources of broadcast into the home to provide the listener with a wide range of simultaneous program choices. In radio broadcasting this goal was fairly well within reach. The FCC has allocated 1,070 kilocycles (kc) of bandwidth to AM radio broadcasting and 20,000 kc to FM. Since each AM signal requires about 50 kc and each FM about 400, many stations can be operated from the same geographical location. Moreover, the broadcasting radius of an AM radio station, not limited to line of sight, can range up to several hundred miles in daytime and even farther at night; thus, the listener can have a choice among many distant and nearby program sources. Finally, the cost of installing and operating a broadcasting station (including its transmitting equipment, tower and antenna) and the cost of programming are relatively small. As a consequence of these factors, more than 6,000 AM and FM broadcasting stations are now operating within the United States.

The technology and economics of television broadcasting stand in marked contrast. The six megacycles of frequency bandwidth required for a television signal is 120 times that required for AM radio. In the only area of frequency space usable for television in the very high frequency (VHF) band, only twelve channels are available and adjacent channel interference prevents the use of more than seven within the same area. The construction cost of television stations and the cost of programming are also much higher than for radio.\(^1\) Thus, in contrast to the several thousand radio stations, only 499 commercial

television stations were in operation by the end of 1968. Clearly, then, the goal of program diversity in VHF is harder to attain.

Despite the modest frequency requirements of radio, interference became a problem in the 1920s as hundreds of stations became concentrated in urban areas. Complaints were voiced in rural and sparsely populated districts that big city stations, such as in Chicago and New York, were monopolizing frequencies with the use of powerful transmitters. About 600 of the 700 stations operating in 1927 were located in 21 states, with 70 in New York alone. In response to the needs of smaller communities, section 307(b) was added to the Communications Act of 1934. It stipulated that in approving future licenses, the FCC was to make a "fair, efficient and equitable distribution" among the states and communities. This promotion of "localism" became a major policy of the FCC.

...The "radio services" the FCC was required to "distribute fairly" were not simply reception services -- such as might be provided by powerful distant stations -- but local transmission services capable of satisfying the local-programming and advertising needs of the community in which the transmitter was located. Thus, in its primer on the licensee's duties known as the "Bluebook," the Commission noted in 1946 that in granting and renewing licenses it had given "repeated and explicit recognition to the need for adequate reflection in programs of local interests, activities and talent," and it declared that "reasonable provision for local self-expression still remains an essential function of a station's operation."1

However, to carry over this policy of localism to television meant that if each community were to have its own local station, not even seven channels could be used in one city without reducing the number of channels available to adjacent cities. With only twelve channels of spectrum space available, most markets would have no more than two or three channels -- a far cry from the prevailing choice among radio stations.

---
The FCC's emphasis on localism did not go unchallenged. During the early years of VHF use only three networks had emerged -- NBC, CBS, and ABC. Proponents of a fourth network, most notably the Dumont Company, argued that a greater choice of programming through regional broadcasting (involving the assignment of four commercial VHF stations to as many of the major markets as possible) might be worth some reduction in the total number of local stations.

But the FCC disagreed. Pursuing the goals of diversity, and at the same time holding to the concept of localism, the FCC urged television experiments in the ultra-high frequency band (UHF) with the hope that broadcasting would eventually become feasible in regions above VHF. In 1952, after UHF technology had sufficiently progressed, the FCC allocated to television 70 additional channels in the UHF band. At the same time, in its Sixth Report and Order, the FCC established a set of priorities for development of television broadcasting clearly reflecting the emphasis on localism. These priorities include:

1. To provide at least one television service to all parts of the United States.

2. To provide each community with at least one television broadcast station.

3. To provide a choice of at least two television services to all parts of the United States.

4. To provide each community with at least two television stations.

However, the growth and profitability of UHF broadcasting have generally been less favorable than the FCC had hoped back in 1952. By the end of 1968, 163 commercial UHF stations were operating out of the 654 channel allocations made to commercial UHF, while 499 of the 595 channels allocated to commercial VHF were in use.¹ Table 1 shows that the number of commercial VHF stations has more than doubled since 1954 while the number of UHF has increased by about 35 percent. During 1967, VHF stations enjoyed total revenues about 38 percent in excess of

Table 1

TELEVISION STATIONS ON THE AIR, 1954-1969a

<table>
<thead>
<tr>
<th>Year</th>
<th>VHF Stations</th>
<th></th>
<th></th>
<th>UHF Stations</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Commercial</td>
<td>Non-commercial</td>
<td>Total</td>
<td>Commercial</td>
<td>Non-commercial</td>
<td>Total</td>
</tr>
<tr>
<td>1954</td>
<td>233</td>
<td>1</td>
<td>234</td>
<td>121</td>
<td>1</td>
<td>122</td>
</tr>
<tr>
<td>1955</td>
<td>297</td>
<td>8</td>
<td>305</td>
<td>114</td>
<td>3</td>
<td>117</td>
</tr>
<tr>
<td>1956</td>
<td>344</td>
<td>13</td>
<td>357</td>
<td>97</td>
<td>5</td>
<td>102</td>
</tr>
<tr>
<td>1957</td>
<td>381</td>
<td>17</td>
<td>398</td>
<td>90</td>
<td>6</td>
<td>96</td>
</tr>
<tr>
<td>1958</td>
<td>411</td>
<td>22</td>
<td>433</td>
<td>84</td>
<td>6</td>
<td>90</td>
</tr>
<tr>
<td>1959</td>
<td>433</td>
<td>28</td>
<td>461</td>
<td>77</td>
<td>7</td>
<td>84</td>
</tr>
<tr>
<td>1960</td>
<td>440</td>
<td>34</td>
<td>474</td>
<td>75</td>
<td>10</td>
<td>85</td>
</tr>
<tr>
<td>1961</td>
<td>451</td>
<td>37</td>
<td>488</td>
<td>76</td>
<td>15</td>
<td>91</td>
</tr>
<tr>
<td>1962</td>
<td>458</td>
<td>43</td>
<td>501</td>
<td>83</td>
<td>19</td>
<td>102</td>
</tr>
<tr>
<td>1963</td>
<td>466</td>
<td>46</td>
<td>512</td>
<td>91</td>
<td>22</td>
<td>113</td>
</tr>
<tr>
<td>1964</td>
<td>476</td>
<td>53</td>
<td>529</td>
<td>88</td>
<td>32</td>
<td>120</td>
</tr>
<tr>
<td>1965</td>
<td>481</td>
<td>58</td>
<td>539</td>
<td>88</td>
<td>41</td>
<td>129</td>
</tr>
<tr>
<td>1966</td>
<td>486</td>
<td>65</td>
<td>551</td>
<td>99</td>
<td>49</td>
<td>148</td>
</tr>
<tr>
<td>1967</td>
<td>492</td>
<td>71</td>
<td>563</td>
<td>118</td>
<td>56</td>
<td>174</td>
</tr>
<tr>
<td>1968</td>
<td>499</td>
<td>75</td>
<td>574</td>
<td>136</td>
<td>75</td>
<td>211</td>
</tr>
<tr>
<td>1969</td>
<td>499</td>
<td>78</td>
<td>577</td>
<td>163</td>
<td>97</td>
<td>260</td>
</tr>
</tbody>
</table>

Note:

aFigures are for January 1 of each year.

Source:

expenses, while the revenues of UHF stations fell short of expenses by about 20 percent.\(^1\) Table 2 discloses that aggregate losses of UHF stations have been increasing in recent years with a declining percentage reporting a profit, in contrast to the experience in VHF. Many UHF stations broadcast only during portions of the day (generally in the afternoon and evening). Advertising revenues are not sufficient to cover even the out-of-pocket cost of operating during the rest of the day.

For several reasons the prospects of profitably operating a commercial UHF station have been discouraging. During the early years, only a small audience had TV sets capable of tuning to UHF frequencies. Set manufacturers were reluctant to add UHF tuning in the face of tepid public demand which, in turn, reflected the fact that only a few UHF stations were on the air. Moreover, CBS and NBC already had an extensive line of VHF affiliates; other networks, depending largely on UHF affiliation, would face tough sledding against such formidable competition. ABC survived only with difficulty and a fourth budding network, Dumont, failed. Without network affiliation, UHF stations are denied the expensive high-quality programming -- and the higher advertising revenues -- available to competitors.\(^2\) Finally, the broadcast station operating in the UHF band has a smaller broadcasting radius for a given transmitter power and antenna height than is the case in VHF.

To be sure, the prospects for UHF are improving. To break the circle of small UHF audience—few stations—small UHF audience, the FCC supported passage by Congress of the All-Channel Television Receivers Act of 1964, which required that all new sets manufactured be capable of receiving UHF as well as VHF signals. Under the impact of this legislation, over 50 percent of all receivers now have

\(^1\)FCC, 34th Annual Report, Fiscal Year 1968, Washington, D.C., 1969, p. 122. These figures exclude the operations of the 15 stations owned by the three national networks.

\(^2\)The importance of network affiliation is suggested by the fact that in 1968 only two of the 37 non-affiliated UHF stations enjoyed a profit, while 51 out of the 81 UHF affiliated stations reported a profit. FCC, TV Broadcast Financial Data, 1968, Washington, D.C., 1969, Table 5.
### Table 2

COMMERCIAL BROADCASTING REVENUES AND PROFITS, 1960-1968\(^a\)

(in millions of dollars)

| Year | VHF Stations | | | | UHF Stations | | | |
|------|--------------|-----------------|----------------|----------------|-----------------|----------------|
|      | Number of Stations Reporting | Total Revenues | Profits | Percentage of Stations Reporting Profits | Number of Stations Reporting | Total Revenues | Profits | Percentage of Stations Reporting Profits |
| 1960 | 439 | $597.1 | $148.6 | 81 | 76 | $30.8 | $0.3 | 50 |
| 1961 | 444 | 611.6 | 150.6 | 79 | 81 | 31.4 | -0.6 | 39 |
| 1962 | 456 | 697.6 | 199.3 | 81 | 83 | 34.4 | 0.9 | 57 |
| 1963 | 464 | 737.8 | 206.8 | 83 | 86 | 39.1 | 0.2 | 58 |
| 1964 | 468 | 820.3 | 256.4 | 85 | 92 | 44.3 | 2.7 | 68 |
| 1965 | 473 | 891.3 | 286.5 | 87 | 100 | 49.7 | -0.2 | 65 |
| 1966 | 479 | 976.9 | 313.5 | 87 | 114 | 59.8 | -7.4 | 59 |
| 1967 | 471 | 989.9 | 272.2 | 83 | 133 | 68.9 | -17.7 | 42 |
| 1968 | 473 | 1122.1 | 345.6 | 86 | 154 | 90.9 | -29.5 | 45 |

Note:

\(^a\)These data exclude the operations of the 15 stations owned by the three national networks.

Source:

FCC, TV Broadcast Financial Data (Annually), Various years.
all-channel capability; nearly all will have this capability within the next five years. Moreover, recent development of automated transmitters has substantially reduced operating costs in the UHF band.

Still, the longer term prospects of UHF are not clear, apart from the potential competitive growth of cable discussed below. Some observers are optimistic that, with the favorable longer term effects of the all-channel legislation and of other factors, UHF will eventually "turn the corner" in profitability. They emphasize that specialized networks may eventually emerge to encompass and make viable strings of UHF stations, and they point to the fact that, as shown in Table 1, the number of UHF stations has increased markedly in recent years. Others are pessimistic on grounds, in part, that much depends on the formation of a viable general fourth network embracing a large string of UHF stations, although they contend that prospects are not good for the eventual emergence of such a network.

However, even if all UHF channels currently allocated by the FCC were eventually used, the number of commercial signals in each metropolitan area would remain limited. With some exceptions, six to nine channels would be available in the top 50 markets (containing about 60 percent of the nation's population), five to seven in the next 25 markets, four to six in the next 25, and fewer in smaller markets.

These FCC policies of promoting numerous sources of programming and localism have operated within the context of "free" television supported by commercial sponsors using the medium as an advertising outlet. (In contrast, many other countries depend heavily on government

1See the discussion of the promise of UHF in Maximum Service Telecasters, filing before the FCC, Docket 18397, May 12, 1969, pp. 25-31 and Exhibit B.


3These markets, encompassing separate major metropolitan areas, are ranked in size according to population. Figures for channel allocations are taken from Maximum Service Telecasters, op. cit., Exhibit A.
subsidy or special taxes on television receiving sets to support their broadcasting systems.) The tradition of advertiser supported broadcast, also dating from the early days of radio, is difficult to apply to television because of the high costs involved in television broadcast noted previously. It was early recognized that commercial support alone would not be adequate to bring forth a wide range of programming of a cultural and educational sort catering to small audiences with special tastes. The thrust of commercial profitability would necessarily be towards mass audience appeal that would attract sufficient advertising dollars to offset these high costs.

To meet this deficiency, the FCC has moved basically in two directions: (a) To emphasize the public responsibility of broadcasting stations in programming material not commercially profitable. As a substitute for regulation to limit profits, the policy emerged early in the growth of radio to force the channeling of some of these profits to serve the public benefit; that is, to cater to local needs and to sponsor programming aimed at relatively limited audiences. (b) To promote the growth of separate non-commercial stations shown in Table 1. These stations are supported from a variety of sources including: viewer contributions; foundation grants; funding by federal, state and local government; and commercial contributions in the form of "underwriting."

Nevertheless, much concern has been expressed in recent years that the full potential of television has never been attained, and that programming is dominated by mass-appeal light entertainment, while the role of cultural, educational, and instructional uses is being badly slighted. Some observers assert that broadcasters have not taken their obligations of public service seriously, that many of them have relied almost exclusively on network and syndicated programming with little attention to the local needs of the community, and that in any event the FCC routinely renews broadcasting licenses when they expire every three years.¹

¹Renewal is, however, less routine nowadays. The contesting of renewals by interested citizens groups and other parties is becoming increasingly common.
Others have emphasized the financial straits of non-commercial broadcasters that severely limits quality and quantity of programming and the number of stations.\(^1\) In particular, the Ford Foundation has attracted much attention by proposing that a domestic satellite system be established to provide free interconnection for non-commercial television stations, and to use profits of the satellite system from commercial sources to support non-commercial programming.\(^2\) The Carnegie Commission on Educational Television has urged a greatly expanded system of non-commercial television stations with large-scale federal support.\(^3\) Both of these efforts, together with pressures from other quarters, have contributed to two major developments: (a) formation of the Corporation for Public Broadcasting to channel money appropriated by Congress to non-commercial service, and (b) establishment of special preferential rates by AT&T for use of its nationwide microwave facilities to interconnect non-commercial stations.

THE EMERGENCE OF CABLE TELEVISION (CATV)

Along with the development of television broadcast in the late 1940s and early 1950s, entrepreneurs hit upon the idea of offering improved television service to viewers by placing a large receiving antenna in some favorable location (as on a mountaintop) from which cable distribution lines could be strung to individual homes. Located in areas of the country where over-the-air television reception was poor or non-existent, these "community antenna television" systems were able to carry several channels of good quality. The willingness of many viewers to pay the $5.00 or so monthly for the service led to encouraging early growth.

\(^1\)Although the FCC has been generous in making allocations in the UHF band for non-commercial television, only 97 of the 523 channels authorized were in use by the end of 1968. In the VHF band 78 non-commercial stations were operating out of the 123 channels allocated, *Television Factbook*, op. cit., pp. 72a and 226a-231a.


From these prosaic beginnings in relatively isolated portions of the country, CATV is experiencing a striking evolution. Although early systems were confined to picking up signals over the air from relatively nearby broadcasting stations, some are now employing microwave relay to bring in signals from several hundred miles away. In addition to retransmitting local and distant signals, some systems have begun to originate low-cost programming including live local events (City Council meetings, forums for local political candidates, high school sports, and so forth), so-called "automatic" services (continuous time and weather, stock ticker), and syndicated feature films and other programming brought in by film and video tape from the outside. In some cases, advertising spots are sold with program origination to provide revenues in addition to subscriber fees. In contrast to the three or four channels available over-the-air in many parts of the country, many cable systems are now carrying 12 channels, some are now being operated with the 20-channel capacity, and in San Jose, for example, a 42-channel system is now under construction.

As shown in Table 3, the cable industry is enjoying rapid growth, with the number of subscribers running to 3.6 million at the beginning of 1969 -- about 6 percent of the total television homes in the United States. In addition to the more than 2,000 systems now operating, about the same number of franchise holders approved by municipalities or other governing bodies are not yet operating, and more than 2,000 other applications are pending approval.

The most impressive growth, however, has been in Canadian metropolitan areas. In part because of cable's ability to bring in the signals of U.S. broadcasting stations, more than half the homes in Vancouver and Victoria are wired; in Ottawa, coverage has gone from zero to 40 percent of the urban homes in about two years. The largest metropolitan concentration in the world, numbering about 100,000 subscribers, is located in Montreal.

The use of cable has attracted widespread attention in recent years because of the exciting potential of its large multi-channel capability. In the near term, it offers prospects of a far wider range of
Table 3
GROWTH OF CABLE TELEVISION SYSTEMS IN THE UNITED STATES, 1952-1969

<table>
<thead>
<tr>
<th>Year</th>
<th>Operating Systems</th>
<th>Total Subscribers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952</td>
<td>70</td>
<td>14,000</td>
</tr>
<tr>
<td>1953</td>
<td>150</td>
<td>30,000</td>
</tr>
<tr>
<td>1954</td>
<td>300</td>
<td>65,000</td>
</tr>
<tr>
<td>1955</td>
<td>400</td>
<td>150,000</td>
</tr>
<tr>
<td>1956</td>
<td>450</td>
<td>300,000</td>
</tr>
<tr>
<td>1957</td>
<td>500</td>
<td>350,000</td>
</tr>
<tr>
<td>1958</td>
<td>525</td>
<td>450,000</td>
</tr>
<tr>
<td>1959</td>
<td>560</td>
<td>550,000</td>
</tr>
<tr>
<td>1960</td>
<td>640</td>
<td>650,000</td>
</tr>
<tr>
<td>1961</td>
<td>700</td>
<td>725,000</td>
</tr>
<tr>
<td>1962</td>
<td>800</td>
<td>850,000</td>
</tr>
<tr>
<td>1963</td>
<td>1,000</td>
<td>950,000</td>
</tr>
<tr>
<td>1964</td>
<td>1,200</td>
<td>1,085,000</td>
</tr>
<tr>
<td>1965</td>
<td>1,325</td>
<td>1,275,000</td>
</tr>
<tr>
<td>1966</td>
<td>1,570</td>
<td>1,575,000</td>
</tr>
<tr>
<td>1967</td>
<td>1,770</td>
<td>2,100,000</td>
</tr>
<tr>
<td>1968</td>
<td>2,000</td>
<td>2,800,000</td>
</tr>
<tr>
<td>1969</td>
<td>2,260</td>
<td>3,600,000</td>
</tr>
</tbody>
</table>

Note:
*Figures are for January 1 of each year.

Source:
informational, instructional, educational, and recreational programming than is possible today over the air. In particular, television may play an expanded role in job and literacy training, in providing instruction at all levels of education from pre-school to graduate training, and in supporting directly the functions of government agencies in information dissemination. For the more distant future, there has been much talk of employing cable for facsimile reproduction in the home of newspapers, mail and other documents; computer links to home and office providing inquiry and response and information retrieval (perhaps leading to the checkless society); municipal surveillance for fire detection, traffic control, and protection against crime; and for many other applications.¹ Plans are already underway to provide syndicated programming designed expressly for cable originations; and much interest is currently being expressed about the prospects for using communications satellites to interconnect cable systems into regional and national networks.

This process of growth and evolution could quite conceivably force a radical restructuring of the television industry — both for good and bad. Carriage of numerous television signals by cable could place local broadcasting stations under greater pressure, perhaps even threatening their viability. Some fear that the very existence of "free" television could be threatened to the detriment both of those who would be forced to pay through cable subscription for programming they now receive without charge over the air, and of those who live in sparsely populated rural areas uneconomic to supply by cable. Moreover, such an expanded role of cable, by its very importance, carries the danger of the single cable operator having excessive control, within his franchise area, over channels of information and the conditions under which it is fed to the viewer. Hence, pressing questions arise about how cable systems should be owned and operated in the interests of maintaining and expanding diverse information flows vital to the democratic process.

¹For a recent extended discussion of these and other possible roles, see Electronics Industries Association, Comments Filed Before the FCC, Docket 18397, October 27, 1969.
The extent to which cable systems continue to grow and to exploit whatever attractive opportunities in fact do arise, will critically depend on the nature of future government regulatory policies at the federal, state, and local levels. The FCC is already being deluged with conflicting arguments, analyses, claims and counter-claims from parties, each having a stake on one side or another. How the Commission formulates its policies in the near term will have great long term importance for the future of television and for the welfare of the viewing public.

The purpose of this study is to explore some of the regulatory issues at the federal level with the goal of shedding light on the effects of alternative courses of action. Most broadly stated, the issues to be addressed include:

(a) conditions under which cable operators should be permitted to carry signals from distant and local broadcasting stations -- in particular, the effects of requiring cable operators to make payment for the right to carry these signals in contrast to the present system in which they pay nothing;

(b) the extent to which cable systems should be permitted or required to originate programming, to sell advertising, and to provide channels on a common carrier basis to outsiders desiring access to the television medium; and

(c) the mechanisms, if any, through which broadcasting stations should be protected or compensated as a consequence of the competitive threat posed by cable.
II. SHOULD CABLE OPERATORS PAY FOR THE BROADCAST SIGNALS THEY CARRY?

THE COMPETITIVE THREAT OF DISTANT SIGNALS

The earliest years of cable television did not create much of a flurry in the broadcasting industry. Many broadcasters welcomed cable as a means of facilitating reception where it otherwise was difficult or impossible, and of expanding the size of their own audiences. This was of particular importance in the case of UHF broadcasting, which was handicapped by technical problems of transmission and the lack of all-channel tuners in the hands of viewers. Carriage by cable of UHF signals placed them on a parity with VHF.

Before long, cable operators found the possibilities increasingly attractive of bringing in signals from stations as far as several hundred miles away. This is done either by picking the signals off the air directly with their master antennas or by employing microwave radio relay. In so doing, they have been able to offer a greater variety of programming over additional channels attractive to subscribers, even in markets where signal quality from local stations is good.

Broadcasters have viewed this expansion with alarm. Potentially, distant signals carried by cable are seriously competitive with local broadcasters. It is feared that the entry of distant signals tends to fragment the local audience, possibly jeopardizing the economic viability of local stations. This is of particular concern to the struggling UHF stations still operating in the red.

Distant signals are seen as a threat also by non-commercial ETV broadcasters. The fragmentation of local audiences through the import of distant ETV signals might reduce the identity of the local ETV station in the local market, adversely affecting the prospects of contributions from local home viewers, schools, and government. As the FCC emphasized in its Second Report and Order:

Members of the public and local businesses will have little or no incentive to support the local station if ETV is made available on the cable by CATV's importation of outside educational stations.... If a distant ETV signal is available on a cable, and can be fitted into local
schedules and instruction, local schools and local and state governments would be much more unlikely to provide financial support and other inputs necessary to start [or maintain] a local educational broadcast service.

More generally, many fear that fragmentation of audiences would lead to the demise of many local stations, especially non-network affiliated UHF, as powerful big stations make progressively greater inroads. In this event, people in areas served by CATV would be forced to subscribe to cable service in order to retain the level of programming they now receive, while those living in sparsely populated rural areas not reached by cable would be denied television service that, in the absence of cable, would otherwise be available.

These considerations have placed the FCC in a difficult position. The same cable penetration that could further the Commission's broad goal of diversity might compromise its promotion of localism and its interest in maintaining "free" over-the-air service. As FCC officials have frequently pointed out, if the goal were to bring more channels into most homes, the FCC need merely have authorized the construction of large, powerful regional broadcasting stations as urged by Dumont. However, this approach had earlier been explicitly rejected in favor of the smaller community stations to provide more locally oriented, though fewer, channels into each market.

Moreover, long before the potential of cable was realized, the FCC had made a firm commitment to the growth of UHF as the best way to encourage numerous program sources. In the early 1950s the Commission made a large allocation of frequency space in the UHF band for television broadcasting, with a generous portion reserved for non-commercial use. It was only after great difficulty that the all-channel tuner legislation, strongly supported by the FCC, passed Congress in

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1964. Having promoted the development of UHF, the Commission could hardly view with equanimity the growth of cable with its distant signals.

Another issue is that of "unfair" competition. Cable systems bring in distant signals "free" without paying any fee to the originating broadcasting station or to the copyright owner, while non-network UHF and VHF stations are subject to full copyright liability. Unlike cable systems, broadcasting stations are not permitted to simply receive and retransmit distant signals to their own local markets (in accordance with Section 307(b) of the Communications Act), for in that mode they would merely serve as translators or satellite relay stations rather than as a source of local origins to serve community needs.

In the face of these conflicts, the FCC only gradually asserted its legal jurisdiction over CATV. Originally the FCC had denied that it had such jurisdiction. However, in 1962 the Commission denied permission to use microwave relay for the sole purpose of serving a cable system that the FCC believed would be harmful to a local television station. Subsequently, in its Second Report and Order (2 FCC 2nd, 1966), the FCC asserted jurisdiction over both microwave and non-microwave served CATVs. Among other things the Second Report:

(a) Requires each cable system to carry all the local signals in its area (at the request of the stations involved) before it is permitted to add distant signals; this "Carriage Rule" is designed to ensure that cable subscribers had access to local signals on parity with distant ones.

(b) Requires the system not to duplicate, through distant signals, programs shown on the same day by a local station (the Non-duplication Rule).

(c) Prohibited (until recently) the further import by cable system of distant signals into the top 100 markets of the United States (encompassing over 80 percent of the total population) without special hearings and waiver proceedings.
More recently (in December 1968) the FCC promulgated a new set of proposed rules. Perhaps most important was the abandonment of the hearing and waiver procedure in the 100 top markets in favor of a rule that before bringing a distant signal into these markets CATV must obtain retransmission consent from the originating station.\(^1\) At first blush, this provision sounds reasonable enough. However, these stations generally do not have the legal right to grant retransmission consent, because their contracts with copyright holders usually grant use of the copyrighted material solely to the originating stations. Hence, the provision of the proposed rulemaking would require that cable operators go beyond the originating station and obtain clearance from the copyright holders. Not only would fees paid to copyright owners constitute an added cost to CATV operations, but cable operators assert that the sheer mechanics of the clearance process would be formidable. In contrast to merely turning on the signal from the distant stations to fill channels in the cable, clearance on a continuous basis for several channels allegedly would require massive paperwork -- a potentially serious burden since many cable systems are still quite small, with hundreds rather than thousands of subscribers, and they operate on very modest budgets.\(^2\) (The problem for broadcasting stations presumably is less serious since each has only one channel to fill.)

Outside the top 100 markets, no explicit restrictions exist (at this writing) on cable systems bringing in distant signals via over-the-air pickup, save that they are generally not permitted to "leapfrog," that is, to skip over nearer broadcasting stations to bring in yet more distant signals. For systems employing microwave links, the FCC now generally permits import of signals sufficient to provide, in combination with local signals, the service of the three national networks,


\(^2\)In private correspondence with the author, Professor Jack Hirshleifer comments, "The supposed difficulty of obtaining retransmission consent strikes me as nothing but a red herring. If cable were paying for retransmission, the owners of copyright would think of a way of selling the rights."
one independent commercial station, and an undetermined number of
non-commercial stations.

Cable interests generally assert that growth of CATV in major
markets is crucially dependent on the use of distant signals. Even
in markets that have several stations, the import of signals, especially
from strong independent stations such as from New York and Los Angeles,
serves to improve significantly the total package offered to subscribers.
Furthermore, incensed by this recent move of the FCC, cable operators
point to the fact that in 1968 the Supreme Court had decided in the
Fortnightly case that they are not liable for copyright in picking off
the air and retransmitting signals over their cables, on grounds that
the pickup, amplification, and redistribution of signals via cable does
not constitute a "performance"1 (the Court was silent with respect to
distant signals brought in by microwave relay). Yet, until Congress
passes legislation resolving the copyright issue, or until the FCC
modifies its rule on distant signals, the import of distant signals
into the 100 top markets appears, for practical purposes, to be frozen
to the levels granted under the preceding hearings and waiver
procedure.2

From the preceding discussion three basic questions emerge: (1)
What does and does not constitute unfair competition between cable and
over-the-air broadcast? (2) What would be the likely effects on cable
operations, broadcasters, advertisers, and program producers of per-
mitting cable operators in any and all markets to employ distant

1Fortnightly Corp. vs. United Artists Television, Inc., 392 U.S.
390 (1968). The tortuous course of the arguments in court about the
nature of electronic signals producing a TV signal and whether, for
example, a copy is produced "which comes so near to the original as to
give every person seeing it the idea created by the original," is re-
counted in "CATV and Copyright Liability: A Note," Harvard Law Review,
1967, pp. 1522-1523.

2As this Memorandum was being completed in mid-December 1969, a
legislative bill to amend the copyright laws to take into account cable
television was reported out of the Senate Subcommittee on Patents, Trade-
marks, and Copyrights. The full Judiciary Committee is to consider the
signals without payment? (3) What would be the effects of requiring cable operators to make payment? These will be treated in turn.

The Question of Unfair Competition

As mentioned above, much of the concern about the use of "free" distant signals by CATV is that this practice is widely interpreted as unfairly competitive with the independent non-network broadcasting stations that are required to pay for all their programs. It is this situation of alleged unfair competition that has led the FCC to propose clearance through copyright owners in order to achieve parity between cable and broadcast modes.

However, this concept of unfair competition is misleading. The fact that one entity pays for programming while another does not, is, by itself, insufficient for judging the fairness of competition. One must take into account the sources of revenue as well. On the one hand, independent broadcasters pay royalties and fees for the film and video tape programs they bring in from the outside; but they collect all of the revenues from time sales to advertising for the commercials inserted within and between these programs. On the other hand, network affiliated stations do not pay for programming they receive from the networks; in fact, they are generally paid by the networks to run "network fare." Since the networks themselves, not the individual stations, collect the revenues for the commercials interspersed among the programs, these payments to affiliates represent the affiliates' cut of the advertising proceeds. During times of the day when the affiliates do not carry network programs, and also during network stationbreaks, the stations sell time to advertisers and collect the revenues directly. In such cases, the affiliates are like non-affiliated stations in that they pay for non-network programming. Sometimes an affiliated station enjoys greater profit by running a non-network program, and paying the fees and royalties involved but also keeping all of the advertising proceeds than it does running the "free" network program and reaping only part of the advertiser proceeds. In such cases, the affiliate may simply not carry the network program (that is, refuse clearance
to the network during that time period), or the network might agree to pay a greater amount than usual to obtain clearance.\footnote{This does not mean, however, that the network always seeks clearance from all its affiliates for all programming. Rather, it sells time to advertisers for a particular "lineup" of affiliates chosen by the advertisers depending on the kind of market coverage they seek. In some cases affiliates included in this lineup will nevertheless refuse to carry the network program. On the other hand, instances have occurred in which an affiliate not included in the lineup will offer to carry an especially attractive network program without compensation. The best description of network practices is contained in House Commerce Committee, \textit{Report on Network Broadcasting} (the Barrow Report), 1958.}

In the case of cable, no payment is made for the programming contained in distant signals but neither does the cable operator receive any of the commercial revenues collected by the originating stations for the accompanying advertising. (Were the cable operator to delete this advertising and insert his own advertising, then his use of free programming could more clearly be regarded as unfair.) By accepting a stream of programming with advertising inserted by the originating station, the cable system is in somewhat the same position as a network affiliate, except that unlike the affiliate it is not paid by the station originating the programming and advertising.

\textbf{Eroding the Base of Advertiser Support}

If the use of free distant signals is not evidence \textit{per se} of unfair competition, as suggested above, one might conclude that cable systems should be permitted to carry without payment distant signals in both large and small markets, that is, that the prohibition by the FCC on distant signals in the top 100 markets should be liberalized or totally abandoned. However, quite aside from questions of what is and what is not "fair" to the private parties concerned, the continued and expanded use of free distant signals can have significant effects -- some possibly detrimental -- to the viewing public. The use of distant signals without payment could possibly \textit{erode} sources of advertiser support for over-the-air broadcasting in a socially undesirable manner. Conversely, program payments might be socially desirable in that cost sharing
by cable operators and over-the-air advertisers could help expand program production. We shall now explore these possibilities.

A potential problem of expanding the use by cable of free distant signals is that of eroding the base of advertiser support for programming being carried over the air. This problem can most easily be appreciated by considering the following simple hypothetical example: Consider two markets, A and B, some hundred miles apart, each having three local stations. Cable has 50 percent penetration in each market (one-half the homes are on cable) and each cable system imports all the signals from the other market; thus A and B each have six signals--three local and three distant. The total hours of viewing in each market are constant, and the number of hours are split evenly among all the signals available in each market. Hence the import of three distant signals would serve to reduce by one-half the cable connected audience available to each of the local stations in its local market. Thus, the total local audience of each station would fall by one-fourth. If the advertising revenue each station obtains is proportional to its local audience size (let us assume momentarily that the distant audience has no value to the advertisers carried by the local station), then revenues of each station would fall by one-fourth and the amounts available for programming would probably decline. As a symptom of this reduction in revenues, copyright owners would complain (as they now in fact are complaining) that local stations are no longer able to pay enough for particular programming because the stations are forced to compete against local cable systems that import the same or similar programs without payment to copyright owners.

Instead of assuming that the distant audience covered by cable has no advertising value to the local station, let us suppose now that the distant audience has the same value to the local station's advertisers as does its local audience, that is, its advertisers are willing to pay the same rate for a total audience of a given size regardless of how the audience is divided between local and distant viewers. In this case, the solution to our problem would be easy. In the above example of three stations each in markets A and B, each station would have the
same total audience whether only three signals or six signals are available in each market; only the composition between local and distant services would be affected. The carriage of signals between A and B by cable would not force a reduction in advertisement revenues of each station, and the position of copyright owners would remain unchanged.

Thus, a critical question relates to how advertisers value distant audiences relative to local ones when they buy time on a station. If they value them equally, then carriage of distant signals would bring about a shift in the composition of audiences available to local stations, but gains should roughly equal the losses for the broadcasting industry taken as a whole. At the same time, we would expect that some stations would lose and others would gain insofar as, for a particular station, losses of local audience may be greater, or less, than its gains in distant audiences covered by cable carrying its signals.

In fact, there is reason to believe that advertisers, on the whole, do not value distant and local audiences equally at any instant of time. Although the distant audience frequently has some value to the advertiser buying time on a local station, it is probably less than the value for the local audience of the same station. In the first place, it is clearly true that strictly local advertisers, which today comprise about 20 percent of total television broadcasting time sales, place little if any value on distant audiences; the used car dealer who buys time from the Los Angeles station would have little interest in knowing that the station signal is also carried by a station in Albuquerque. Secondly, even regional and national advertisers do not view all audiences equally. Non-network national spot sales of broadcasting stations comprise nearly 50 percent of total broadcasting time sales, while network sales comprise roughly 30 percent. The national spot sales market operates to satisfy the desire of advertisers to pinpoint markets at particular times without paying the price of simultaneous exposure elsewhere. And in buying time from networks, advertisers are careful to select a particular lineup
or subset of the network's affiliates.\(^1\) In both cases, the valuation
an advertiser places on a particular market depends on a number of
factors, including his coverage through other media, the character of
the local population, and the extent to which he has sales outlets in
those markets. Sometimes, an advertiser is interested in a coordinated
campaign with newspaper, radio, television and other media in a given
market where timing is of crucial importance.

Were cable systems to continue rapid growth to include, say 50 or
60 percent of total U.S. households, and were they free to carry what-
ever distant signals they wish, we would expect stations to shift
their advertising appeal to regional and national levels to take fuller
advantage of whatever distant audiences are covered by cable systems
carrying their signals, and to help counterbalance their loss of local
audience occasioned by the import of distant signals into their own
local markets. (Even today advertising sales efforts of many stations
make a point of these additional audiences covered by cable systems
carrying their signals.\(^2\) Under these circumstances they would behave
more and more as networks, that is, offering the regional or national
advertiser coverage in the local market plus simultaneous coverage via
cable in a number of distant ones. But in this process they would be
handicapped in that the "lineup" of distant markets they would be able
to offer to the advertiser would likely not be the combination the
advertiser most desires. Unlike the network of today that selects
from its affiliates a particular lineup for its advertisers, the station
here would have no control over which cable systems do and which do not
carry its signal.

Thus, not only would the medium become less attractive to purely
local advertisers, but regional and local advertisers would find it a

\(^1\) However, this selection process is limited to the extent that
networks generally maintain a "must buy" lineup of affiliates operating
in the top 50 or so markets, which the advertiser must accept in addi-
tion to whichever other markets he chooses to cover.

\(^2\) Striking examples of the stations' appeal to advertisers on the
basis of the expanded audience are contained in 89th Cong., 1st Sess.,
Copyright Hearings Before Subcommittee No. 3, Committee of the Judiciary,
pp. 1281-1306.
less flexible system of coverage than today's networks, which can tailor lineups of affiliates in accordance with the needs of advertisers, and the national spot market, which provides access to particular markets on an ad hoc basis. As a result, television as an advertising medium would likely fall in attractiveness relative to other media such as newspapers and magazines. In this case we would expect some shift in advertiser support away from television -- a shift imposing more severe constraints on the range and quality of programming, and on the number of economically viable broadcasting stations.\footnote{This is not to imply that a reduction in advertising revenues would force a reduction in programming of the same amount. We would normally expect a fall in revenues to be spread among reductions in profits, and in other expenses as well as programming. However, the fact that programming comprises a large share of total broadcasting expenses (see Table 5, p. 69), suggests that it would be vulnerable.}

Degradation in programming available both to over-the-air viewers and to cable subscribers (via distant signals) could be substantial -- despite the possibility that cable subscribers as a group might be willing, if given the option, to make payments to prevent the degradation, and despite the loss in benefits to over-the-air viewers. The latter aspect is particularly bothersome since the range of quality programming over-the-air is already constrained by the amounts advertisers -- not viewers -- are willing to pay to support the system. The benefit that viewers derive could, at least for some kinds of programming, far exceed the few cents per viewer per hour that advertisers are today willing to spend. If so, a reduction in advertiser support of a given amount would force a reduction of many times that amount in benefits derived by the viewer. In short, a system permitting cable operators free and unlimited access to distant signals would carry with it no mechanism through which subscribers willing to pay for better and more diverse programming by distant signals would be able to do so, and it would generate a loss to over-the-air viewers not taken into account in the calculations of the cable operator.\footnote{To be sure, cable operators might be induced to "volunteer" financial support to the originating station in order to maintain a higher...}
This erosion would impose a handicap on over-the-air broadcasting quite separate from, and in addition to, the direct competitive threat imposed by cable. This competitive threat, to be discussed more extensively in the final section of this study, arises from the fact that if cable systems themselves originate programming and sell advertising, they compete directly with broadcasters for programming and for advertising revenue. But in the case here, broadcasters would suffer even if cable systems did not originate programs, did not sell advertising and, moreover, did not reduce the total size of audience for a given station (but only changed the audience split between local and distant viewers). In other words, erosion might occur even if cable systems were nothing more than passive receivers of television signals as considered by the Supreme Court in the *Fornightly* case (where cable systems were held not legally liable for payment for distant signals -- at least not for those picked up over the air).

Unfortunately we can speak here only in terms of tendencies and possibilities; we do not know the quantitative magnitude of this erosion problem because of the complexities of advertiser valuations and the complications of offsetting factors. In particular, we have assumed that total viewing hours remain constant regardless of the number of signals available in each market. It would be more reasonable to expect total viewing hours to increase with additional signals, but with the increase in the total becoming smaller and smaller as more and more signals are added. The value to advertisers of this increase in

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level of programming, if their subscribers desire it. The trouble would come in enforcing the collection system of such voluntary contributions. Though benefiting from a distant signal, say from station X, each cable operator would still prefer to bring in X's signal without payment if he could do so. Since each contribution would constitute only a small part of the total revenues to X, and since X cannot deny to cable operators use of its signal, each operator could take advantage of X's signal so long as the other operators do continue their contributions. With each operator reasoning the same way, it would be difficult to initiate and to hold together a satisfactory system of voluntary contributions.

1 One way to avoid this erosion would involve operators deleting the advertising on the distant signals, inserting their own and paying copyright accordingly. This approach is explored in greater detail in Section III.
viewing hours would run counter to the erosion effect. Moreover, although the system of unrestricted free use of signals described above would not exactly fit the preferences of advertisers, neither does the present system. That is, the broadcasting radius of a station is not necessarily in accord with the exact market the advertiser would prefer. Nor can the lineup of affiliates be expected to match exactly his preferences in his purchases from networks. Free use of distant signals would be less suitable than the present system in accommodating these preferences -- but we cannot say by how much.

Whatever is the quantitative significance of the erosion problem, yet another reason exists for cable operators to pay for distant signals. Even if advertiser erosion were not an issue, payment would constitute an additional revenue source to program producers that would likely stimulate production of additional programming in a socially desirable fashion. It is to this point that we now turn.

SHARING OF PROGRAM COSTS BY MULTIPLE USERS

The fact that today cable does not pay for broadcast signals while television stations (either directly or through networks) and movie theatre owners do pay for programming is largely an historical and technical accident. Conceivably, television could have first developed as a wire system with wire operators subject to full copyright liability. Subsequently, an over-the-air broadcasting technique might have developed within which station operators tapped into the wire and, without making payments to anyone, have broadcast "free" signals over the air. As another possibility, movies might have been produced for over-the-air television, and subsequently entrepreneurs might have discovered the potential profitability of picking up the signal of distant broadcasting stations with a sophisticated antenna, directing the image against a theatre movie screen and charging people an admission fee to the theatre for the privilege of viewing a "big screen" reproduction of a movie they would not be able to pick up with their own home rooftop antennas. As discussed earlier, it is true that advertising carried on the signal
redounds to the benefit of the originator of that advertising, whether to a network or to a station. But there is no compelling reason why other users in addition to advertisers should not also help defray the cost of the same programming. Or, to express the point differently, the fact that a movie is produced primarily for the theatre market and supported by paid admissions does not suggest that television stations supported by advertising revenues should have free access to those movies. Nor does the production of programming primarily for the advertiser supported broadcast market suggest that cable systems supported by subscribers should have free access to that programming.

In this connection, we should note the dichotomy in the treatment of broadcast signals and originations of programming directly on cable. If the cable operator seeks rights to a video tape or film for "origination" playback over his cable, there is no question of copyright liability. As in the case of the theatre or independent broadcasting station, he is subject to full copyright liability within which he pays fees in accordance with supply and demand characteristics of the marketplace. Yet, if he merely flips a switch to bring in a distant broadcast signal, he pays nothing. In practice, the only distinction between the two forms of obtaining programming is that one signal carries someone else's advertising, while his own originations may or may not carry his own advertising. ¹ Although he would likely not pay as much for the broadcast signal as he does for his own originations (to the extent that the originator of the advertising on the broadcast signal derives benefit) it is equally unlikely that the cable operator would have access to one signal for free while paying a full market price for the other.

¹Some argue that an additional distinction arises in that the cable operator chooses the particular program he originates but he accepts the choice in programming made by someone else when he carries a distant signal. This argument seems to be a weak basis for a difference in copyright treatment. It ignores the point that he can choose whether or not to carry the distant signal at all; and it ignores the possibility that he can blank out or carry particular programs on the distant signal, depending on his liking. Under the FCC's Non-duplication Rule, he must blank out programs on the distant signal that duplicate programs appearing on the local stations on the same day.
Payments by cable operators for distant signals is defensible on grounds that the sharing of program costs by cable operators and broadcasters would promote a wider range of programming -- for both cable subscribers and over-the-air viewers -- than would be profitable under today's exclusive reliance on advertiser support for commercial broadcasting. Potentially, the financial contribution by cable is substantial. The FCC has already noted as an illustrative example that if 45 million of the present 58 million television homes in the nation were served by cable, and if $1 per month per subscriber were allocated to program support, the $540 million generated annually would amount to roughly two-thirds of the total currently being spent by the three national television networks for programming.¹

As mentioned earlier, a good deal of concern has been expressed that reliance on commercial advertiser support, combined with severe constraints on the number of channels in given markets, biases the composition of programming toward lightweight mass entertainment. As Steiner has pointed out,² if there are only a few broadcasters in a particular market, if the bulk of the audience in the market is interested in light entertainment programming, and if each broadcaster is interested in maximizing his own audience, then each may prefer to duplicate the others' light entertainment programming (for example, two westerns in the same time slot) rather than to strike out in new directions. That is, if one broadcaster can capture 80 percent of the potential viewers with one program type, the second broadcaster would be better off simply duplicating the program type to aim at one-half of the 80 percent, rather than attempting to cater to the tastes of the remaining 20 percent.

Tapping of subscriber fees for copyright payments combined with the special incentives of cable operators may stimulate the production

¹FCC, Notice of Proposed Rulemaking, op. cit., p. 9. Of course, some of this revenue could also be used for programs originating by cable along the lines discussed subsequently in Section III.
and wider distribution of programming catering particularly to minority tastes. Although it may be in the interest of broadcasters to duplicate each others' programming along the preceding lines, it does not seem to be in the interest of the cable operator to offer such duplication. Rather than being concerned about maximizing audience on particular channels carried in his cable, he is concerned about the appeal of the whole package of channels in attracting subscribers. That is, he would be less interested in carrying two distant signals, both offering westerns side by side and competing with each other for audiences, than in carrying a single western and then diversifying into other kinds of programming that might have a greater net additive effect to his audience and subscriber base. (In the preceding example, he could already get 80 percent of the audience with one western. By adding something new to the second channel, he may capture a good portion of the remaining 20 percent.)

Payments by cable operators may play a central role in strengthening their ability to achieve a higher level of diversity. To illustrate, let us suppose that operating in a major city are four stations, W, X, Y, and Z, whose signals may be picked up by distant cable systems. Three of them, W, X, and Y offer highly duplicative light entertainment and each captures, let us say, roughly 27 percent of the viewers (while one alone would have gotten roughly 80 percent). Rather than offering yet more duplicative programming, station Z attempts to go after the remaining 20 percent by catering to minority tastes. However, the costs of good quality programming are high. Advertising revenues for a relatively small audience may or may not be sufficient to cover these costs. In the absence of cable, Station Z struggles along for a few years, perhaps accumulating large losses, and eventually gives up -- either by going out of business or deciding that the path of light entertainment is the more lucrative field after all.

Before Z gives up, however, let us suppose that some hundreds of cable systems are anxious to pick up distant signals for which they pay nothing. They would, of course, want to pick up at least one of W, X, or Y. To the extent that W, X, and Y can sell the expanded
audiences in these distant markets to their advertisers, their revenues would be favorably affected. (At the same time, a contrary effect on revenues would operate to the extent that carriage by cable systems of distant signals would also penetrate the local market of W, X, and Y.) The cable systems would also want to bring in Z's signal. Since they bring the signal in "free," however, the only positive incentive they can offer Z to remain in minority audience programming is the expanded audience they offer as a potential source of advertising revenues.

If, in addition, cable operators were themselves to make payments (either to copyright owners supplying programming to Z or directly to Z), the probability would be increased of Z's remaining in business and perhaps catering all the more vigorously to minority tastes. While Z might suffer an erosion of its local audience due to distant signals brought into its local market, along with W, X, and Y, its contribution to diversity -- being highly valued by cable operators -- would place it in a stronger position, relative to W, X, and Y, than would be the case in the absence of cable payments. Moreover, the benefits of the diversity would redound both to cable subscribers and to over-the-air viewers of Z's signal.

CARRIAGE OF LOCAL SIGNALS

Of course, in addition to carrying distant signals cable systems carry the signals of local stations (in fact, as mentioned previously, they are required to do so in accordance with the FCC's Carriage Rule). In this case, the problem of eroding the advertiser base does not arise. Carriage of local signals by cable cannot reduce the size of the local audience available to the station because all cable subscribers as well as over-the-air viewers within range of the signal continue to have access to the station. Since carriage of local signals can only benefit the local stations (hence the rationale for the Carriage Rule), the FCC has not been concerned about the competitive effects of "free" local signals -- in contrast to the case of distant signals.

Nevertheless, copyright owners are attempting to have copyright liability imposed on cable systems not only for distant signals, but
for local signals as well. That is, even where the station has already sold the local audience to advertisers, copyright owners are attempting to obtain additional revenue directly from cable subscribers.1

The argument for payment for local signals rests on weaker grounds than in the case for distant signals. On one hand, payment can be justified for the same reason as that for distant signals discussed above: cable operators, as one class of user, can be expected to pay in the same way as advertisers who also benefit from the programming. In principle, the only distinction between local and distant signals is that the advertising value (per thousand households reached) of a local signal to the local originating station is likely to be greater than is the advertising value to a distant station of its signal carried in the same market. Thus, in bargaining with copyright owners, cable operators would pay less for local signals than for distant ones insofar as advertisers contribute a larger share.

On the other hand, cable operators' powers of selection among distant signals does not extend to local ones. For the FCC's Carriage Rule requires them to carry all local signals as a prerequisite to carrying any distant ones. The compulsory carriage requirement poses two difficulties: First, although cable operators would derive some benefit in carrying local signals, the fact that they are required to carry them would place them at a disadvantage in bargaining with the suppliers of programming carried on those signals. Second, the effects of payment on diversity of programming would be less strong than before. Consider again the situation of Station Z above. This station would continue to be benefited insofar as payments from cable operators in its local market (in addition to revenues from advertisers) would contribute to financing its programming. It may thereby be able to offer

1 Provision for cable paying fees for local signals through a compulsory license procedure was included in a draft compromise agreement in mid-1969 between the staffs of the National Association of Broadcasters (NAB) and the National Cable Television Association (NCTA). Although the agreement failed to be ratified (largely for other reasons) copyright owners continue to argue in favor of copyright liability on local, as well as on distant, signals.
programming that otherwise would have been unprofitable. However, payments by local cable operators would have a less direct effect on diversity than considered above insofar as payments would also be required to W, X, and Y even though cable operators might have preferred to delete, say, X, which largely duplicates W's and Y's programming, and to divert payments to Z's program suppliers.

All we can conclude here is that if payment is to be required for local signals, it should be set at some relatively low level. Perhaps as a substitute for open bargaining with copyright owners, a suitable approach would involve a compulsory license under which the cable operator would pay some fee (possibly a percentage of gross revenues determined by government arbitration) for copyright clearance.

TREATMENT OF NON-COMMERCIAL SIGNALS

Non-commercial stations may find themselves in a strong position insofar as they add diversity to the programming package in a way valued by cable operators. 1 (In other words, the non-commercial station may be in much the same position as hypothetical station Z described above.) In this connection, an interesting example of the many cable systems currently carrying the signal of a non-commercial Los Angeles station is shown in Table 4. However, as mentioned earlier, non-commercial stations may also be endangered by the entry of distant signals into their local markets. If cable operators are permitted to import distant non-commercial signals as well as commercial ones, the question arises about the mechanism (or lack of one) through which non-commercial stations will be able to benefit from the carriage of their signal by distant cable systems in order to offset the fragmentation of their local audiences. We have seen that, to some extent, the harm to commercial stations would be offset insofar as they can sell advertising in distant markets when their own signals are picked up by distant cable operators. But non-commercial operators do not

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1 Notably, the Land Associates Report, op. cit., pp. 30-58, concludes that the addition of a non-commercial station in a multi-station market contributes much more to diversity than does the addition of a commercial signal.
### Table 4

**CABLE CARRIAGE OF NON-COMMERCIAL SIGNALS: AN EXAMPLE**

Community Antenna Television has been the source of tremendous service to KCET, Channel 28. The management thanks the CATV companies listed below for carrying the station's Ultra High Frequency programs on their cables. With channel slots (in parentheses) on the same dial as commercial television and expanded reception in remote areas, more of the viewing public can receive KCET programs.

<table>
<thead>
<tr>
<th>City/Location</th>
<th>Cable Servicing Company</th>
<th>Channel Slot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agoura, Calabasas</td>
<td>Continental Transvideo</td>
<td>10</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>Kern Cable &amp; Bakersfield Cable</td>
<td>10</td>
</tr>
<tr>
<td>Banning</td>
<td>Banning Communications Corp.</td>
<td>6</td>
</tr>
<tr>
<td>Brea</td>
<td>Cablecom-General of Southern California, Inc.</td>
<td>(NA)</td>
</tr>
<tr>
<td>Camarillo</td>
<td>American Cablevision</td>
<td>6</td>
</tr>
<tr>
<td>El Centro</td>
<td>Imperial Valley Cable</td>
<td>6</td>
</tr>
<tr>
<td>Fillmore</td>
<td>Storer Cable TV, Inc.</td>
<td>12</td>
</tr>
<tr>
<td>Friendly Valley</td>
<td>Valley TV Cable Co.</td>
<td>10</td>
</tr>
<tr>
<td>Glendale, Burbank, Sun Valley</td>
<td>National Trans-Video, Inc.</td>
<td>(3)</td>
</tr>
<tr>
<td>Glendora, San Dimas, La Verne, Alta Loma, Duarte</td>
<td>International Cable TV Co.</td>
<td>(12)</td>
</tr>
<tr>
<td>Hemet, San Jacinto</td>
<td>Riverside Cable Co. (NA)</td>
<td>-</td>
</tr>
<tr>
<td>Hermosa Beach, Manhattan Beach, Rolling Hills</td>
<td>Storer Cable TV, Inc.</td>
<td>(3)</td>
</tr>
<tr>
<td>Highland Park</td>
<td>Theta Cable of California</td>
<td>6</td>
</tr>
<tr>
<td>Hollywood Hills</td>
<td>Theta Cable of California</td>
<td>6</td>
</tr>
<tr>
<td>Inglewood</td>
<td>Camarillo System</td>
<td>3</td>
</tr>
<tr>
<td>Irvine, Newport Beach</td>
<td>Community Cablevision Co.</td>
<td>(6)</td>
</tr>
<tr>
<td>La Crescenta, La Cañada</td>
<td>National Trans-Video, Inc.</td>
<td>(6)</td>
</tr>
<tr>
<td>Laguna Beach, So. Laguna, San Juan Capistrano,</td>
<td>Emerald Bay: Storer Cable TV, Inc.</td>
<td>(3)</td>
</tr>
<tr>
<td>Laguna Hills</td>
<td>PCB Cablevision, Inc.</td>
<td>12</td>
</tr>
<tr>
<td>Laguna Niguel</td>
<td>Southern California Video, Inc.</td>
<td>(12)</td>
</tr>
<tr>
<td>Lake Hollywood</td>
<td>Hoffman Electronics Corp.</td>
<td>(6)</td>
</tr>
<tr>
<td>Lincoln Heights</td>
<td>Theta Cable of California</td>
<td>6</td>
</tr>
<tr>
<td>Lompoc, Mission Hills, Solyang, Vandenberg AFB</td>
<td>Lompoc Valley Cable TV, Inc.</td>
<td>(8)</td>
</tr>
<tr>
<td>TeleSystems Company</td>
<td>(6)</td>
<td></td>
</tr>
<tr>
<td>Malibu, Topanga</td>
<td>TeleSystems Company</td>
<td>3</td>
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<tr>
<td>Malibu: Able Cable Company</td>
<td>(6)</td>
<td></td>
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<tr>
<td>Monrovia</td>
<td>International Cable TV Corp.</td>
<td>(12)</td>
</tr>
<tr>
<td>Moorpark</td>
<td>Storer Cable TV, Inc.</td>
<td>12</td>
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<tr>
<td>Newhall, Saugus, Friendly Valley</td>
<td>American Television and Communications Corp.</td>
<td>(10)</td>
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<tr>
<td>Newport</td>
<td>PCB Cablevision, Inc.</td>
<td>(6)</td>
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<tr>
<td>Ojai, Maitnera Oaks, Oakview</td>
<td>Storer Cable TV, Inc.</td>
<td>(12)</td>
</tr>
<tr>
<td>Orange</td>
<td>North Tustin Cable</td>
<td>6</td>
</tr>
<tr>
<td>Omnard</td>
<td>Omnard Cablevision, Inc.</td>
<td>(NA)</td>
</tr>
<tr>
<td>Palisades Bowl</td>
<td>National Trans-Video, Inc.</td>
<td>(6)</td>
</tr>
<tr>
<td>Palm Desert, Cathedral City, Indio, Indian Wells</td>
<td>Coachella Valley TV</td>
<td>(8)</td>
</tr>
<tr>
<td>Palm Springs</td>
<td>Palm Springs TV Co.</td>
<td>8</td>
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<tr>
<td>Palos Verdes Peninsula, Palos Verdes Estates, Rolling Hills</td>
<td>Palos Verdes Cable TV</td>
<td>(12)</td>
</tr>
<tr>
<td>Pasadena</td>
<td>International Cable TV Corp.</td>
<td>(12)</td>
</tr>
<tr>
<td>Princess Park</td>
<td>Better Vue Cable, Inc.</td>
<td>10</td>
</tr>
<tr>
<td>Redondo Beach</td>
<td>Cablecom-General of So. Calif., Inc.</td>
<td>(8)</td>
</tr>
<tr>
<td>Riverside</td>
<td>Riverside Communications Co.</td>
<td>(6)</td>
</tr>
<tr>
<td>San Bernardino</td>
<td>TV Receptors, Inc.</td>
<td>8</td>
</tr>
<tr>
<td>San Bernadino Community TV Antenna</td>
<td>San Bernadino Community TV Antenna</td>
<td>(10)</td>
</tr>
<tr>
<td>San Clemente</td>
<td>San Clemente Cable TV Co.</td>
<td>(6)</td>
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<tr>
<td>San Clemente Cable TV Co.</td>
<td>(6)</td>
<td></td>
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<tr>
<td>San Pedro</td>
<td>Palos Verdes Cable TV</td>
<td>5</td>
</tr>
<tr>
<td>San Juan Capistrano</td>
<td>American Cablevision Co.</td>
<td>(3)</td>
</tr>
<tr>
<td>Santa Barbara, Lake Los Carneros</td>
<td>Cable TV of Santa Barbara, Inc.</td>
<td>(10)</td>
</tr>
<tr>
<td>Santa Maria</td>
<td>Santa Maria Valley Cable TV, Inc.</td>
<td>(12)</td>
</tr>
<tr>
<td>Santa Monica Mountains</td>
<td>Theta Cable of California</td>
<td>6</td>
</tr>
<tr>
<td>Santa Paula</td>
<td>Storer Cable TV, Inc.</td>
<td>12</td>
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<tr>
<td>Sierra Madre, Arcadia</td>
<td>Foothill Cable TV Co.</td>
<td>10</td>
</tr>
<tr>
<td>Signal Hill</td>
<td>Signal Hill Cable TV, Inc.</td>
<td>(3)</td>
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<tr>
<td>Silver Lake</td>
<td>Theta Cable of California</td>
<td>6</td>
</tr>
<tr>
<td>Simi Valley</td>
<td>Clarity TV, Inc.</td>
<td>12</td>
</tr>
<tr>
<td>Tustin</td>
<td>San Clemente Cable TV Co.</td>
<td>(6)</td>
</tr>
<tr>
<td>Trousdale Estates</td>
<td>American Cablevision</td>
<td>3</td>
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<tr>
<td>Twentynine Palms (6 Marine Base)</td>
<td>Twentynine Palms (6 Marine Base)</td>
<td>(3)</td>
</tr>
<tr>
<td>Thousand Oaks</td>
<td>Southern California Cable TV Corp.</td>
<td>(12)</td>
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<td>Tujunga</td>
<td>King Video Cable Co.</td>
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<td>Upland</td>
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<td>(12)</td>
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<td>Ventura, Castita Springs</td>
<td>Avenue TV Coaxial Cable Service</td>
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<td>Westlake</td>
<td>Westlake Communications Co.</td>
<td>(6)</td>
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<tr>
<td>Whittier</td>
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<td>(6)</td>
</tr>
<tr>
<td>Woodland Hills</td>
<td>Theta Cable of California</td>
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</table>

have this opportunity of selling advertising. The best they can hope is that viewers outside the local market watching the distant non-commercial signal can be persuaded to make voluntary contributions. And there is some question whether many viewers will make such contributions when they obtain a signal over a cable for which they are already paying a monthly fee.

One possibility that merits careful attention is to require cable operators to pay a fee to those non-commercial stations whose signals they carry, similar in principle to their payment for copyrighted material obtained through carriage of commercial signals. If it seems reasonable to conclude that cable operators should share with advertisers the cost of commercial programming, it would seem no less reasonable to conclude that cable operators should share the costs of non-commercial programming with federal, state, and local governments, foundations, and other sources of present-day non-commercial financial support. The level of fee paid for non-commercial signals cannot, of course, be determined here, but it is clear that the potential cable subscriber base could make a substantial contribution to the support of non-commercial stations. For example, a fee totalling 10 cents per month per home for non-commercial signals brought into 30 million homes would amount to $36 million per year, or over one-half the total capital and operating expenditures of $67 million per year incurred by the 150 non-commercial stations on the air in 1968.\(^1\)

**MAJOR OBJECTIONS TO PAYMENT**

However attractive the benefits of payments made by cable operators for distant signals may appear to be, several frequently voiced critical questions must be addressed:

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\(^1\)The figure of $67 million is taken from National Association of Educational Broadcasters, Financial and Operating Report for Public Television, Fiscal Year 1968. As in the case of commercial broadcast, the grounds for payment for local non-commercial signals are weaker than those for distant ones, as a consequence of the FCC Carriage Rule.
1. What assurance do we have that copyright owners would not extract from cable operators exorbitant fees, thus seriously retarding the growth of the new technology?

2. Similarly, what assurance do we have that payments made by cable operators would stimulate the production of programming rather than simply swelling the profits of existing program producers and salaries of big name stars?

3. Could feasible arrangements be made for program clearance that would avoid an intolerable burden of paperwork on cable operators seeking to fill their many channels?

4. Why should cable operators be expected to pay since they carry advertising that to some degree benefits the originating stations, and since network affiliates are paid to carry programming and advertising originated by the networks?

5. If payment by cable operators as one class of program user can confer benefits as described above, why stop there? Should not the individual viewer who erects a tall antenna in his backyard also pay? Or, for that matter, should not any over-the-air viewer pay since he represents, after all, another class of user along with the cable subscriber?

With respect to the first question, although many cable operators accept in principle the notion of payment, they are concerned that full liability would lead to exorbitant fees seriously retarding the growth of their industry. This fear arises in part because of the concentrated nature of program production and distribution:

Copyright owners of entertainment works are highly organized and their activities are very well coordinated. Most music composers are members of ASCAP, BMI, or SCSAC. More than 95 percent of the programming that appears on TV is controlled by a small group of producers. The major networks own about 20 percent of all network programming and a substantial share of non-network programs. The Association of Motion Picture and Television Producers, Inc., and the Motion Picture Association of America, Inc. -- which together include most movie and TV program producers --
own in excess of 75 percent of the material being used in
the TV industry today.¹

Concern also arises out of the nature of buyer and seller relationships
that characterize the programming market. Typically, rights to a partic-
cular program are sold to a user under exclusive terms, extending over
a period of months or years, during which time all other potential
users in that market are denied access to the product. Moreover, some
fear that owners of attractive programs, under pressure of large VHF
broadcasters and other competing buyers, will either be dissuaded from
dealing with cable, or doing so only under terms that cable would have
great difficulty in meeting (that is, "If you sell to cable we won't
buy anything from you").

If these factors are serious impediments to the use of distant
signals, then they are also impediments for other uses of programming --
including the film and video tape that cable operators obtain for
their own originsations, the rights purchased by the struggling inde-
pendent UHF broadcasting stations, and the product sold to independent
movie theatres. If concentration in program production and exclusive
dealings are detrimental to the public interest (this study develops
no evidence one way or the other) then the situation would appear to
be a matter either for antitrust action by the Department of Justice,
or for an across-the-board limitation on exclusive use of programming
as discussed in Section IV. It would seem not an appropriate response
to single out distant signals carried by cable for special copyright
treatment. To do so would be analogous to permitting purchase of
certain kinds of automobiles (let us say station wagons) at specially
low prices on grounds that manufacture of automobiles in the United
States is dominated by only three corporations.

The second question, dealing with the responsiveness of programming
production to additional sources of revenue, is related to the first.
If production is concentrated in so few hands, what assurance is there
that the additional revenue would increase production rather than only

¹"CATV and Copyright Liability," op. cit., p. 1528.
increase profits and salaries? Here there is some reason for optimism. In the past, we have seen a response in programming to new market opportunities; in particular, the evolution of the film industry under the stimulus of television.\(^1\) It is well known that film producers take carefully into account the potential profits in both movie markets and television markets before making production decisions. Moreover, much has been written about the difficulties that creative writers, producers, and performers have in gaining access to the television market dominated by concern for popularity ratings and operating in an environment in which commanding roles are played by the three national networks. Such a situation could be radically altered by the opportunities offered as the cable industry grows, by providing both expanded access to local markets and additional financial support through subscriber fees. It now appears that the big star system is essentially obsolete, and that its passing is being marked with a good deal of constructive though painful restructuring within the film industry.\(^2\)

The third question, relating to the mechanics of clearing arrangements for programming, carries some basis for optimism although more research and analysis is needed. Ironically, the very fact that distribution is in so few hands would simplify the clearance process as each distributor could negotiate simultaneously for all of the programming he handles with each expected buyer. Even today's product is frequently sold to broadcasters not on a program-by-program basis, but on a package basis by each distributor. On the buying side, those cable owners having an interest in a number of systems could negotiate simultaneously for all of them. Or agents could handle simultaneously the request of many scattered systems in much the same way that agents today handle clearances for movie theatres. One attractive possibility would involve handling clearances somewhat along the lines that BMI and ASCAP follow in clearing music. In these cases the user, paying

\(^1\) At least one of the seven major producers and distributors of film in the United States derives more than 20 percent of its film rental revenues from series produced specifically for television.

\(^2\) An especially interesting description of the film industry's evolution is contained in *Los Angeles Times*, November 17, 1969, p. 1.
a fixed percentage of his gross, has full access to the music libraries of the organizations. Such possibilities for the cable industry are the subject of continuing Rand research.

The fourth question arises because of the apparently anomalous situation in which network affiliates are being paid to handle network programming while cable operators are expected to pay for a similar privilege. The basic reason that affiliates are paid is that the "opportunity cost" of channel time is high (especially during prime time hours) when only a few channels are available in each local market. To gain access to a particular market, the network must compensate the affiliate for the revenue the affiliate forgoes in not carrying his own programming and advertising during the time slot that network programming is carried. In the case of cable, however, the opportunity cost of channel time is low. By virtue of the fact that cable has many channels the operator "gives up" little by carrying a particular local or distant signal, and hence he is not in a strong bargaining position to extract payment from the originating station. Moreover, and no less important, the cable operator has subscribers who benefit from the local or distant signal and who are willing to pay something for it. Thus, in accordance with the pressures of supply and demand for signals, the cable operator would likely end up making a payment. Conceivably, particular cases might arise in which the operator of the originating station so highly values a particular distant market covered by cable that he would be willing -- in the style of the networks -- to pay for access to it in an amount that might equal or even exceed the payment made by the cable operator to copyright owners. Public policies should be framed to permit a range of outcomes -- including this one -- as a consequence of marketplace transactions.

The final question, relating to where one should draw the line between paying and non-paying users, really hinges on the question of

feasibility of payment. Were it easy to establish and enforce a system of charging the viewer who has the tall backyard antenna, or for that matter any over-the-air viewer, for signals received, then in principle this method would seem an attractive way to further divide the cost of programming with advertisers and other users -- in the same way and for the same reasons that magazines are supported by both purchasers and advertisers. Had payments from viewers been an additional source of revenue we might very well have seen by now more stations on the air and more viable national networks operating. The handicap that television suffers as a consequence of not receiving payments from viewers can best be appreciated by imagining what would be the nature of today's magazine industry were it entirely dependent on revenues generated by advertising.¹

*   *   *

In conclusion, we have seen that although the use of free distant signals by cable systems is not in itself evidence of unfair competition with broadcasters, unrestricted free use of distant signals might have eroding effects on broadcasting advertisers' support, even if cable operations did not reduce the total audience size of stations. Moreover, payment for both commercial and non-commercial signals may have beneficial effects on diversity in programming by reducing the programming costs to stations whose signals are carried on cable. In the case of local signals, grounds for payment are weaker insofar as the FCC's Carriage Rule gives the cable operator no power of choice among local stations.

In general, cable growth will make the television industry more competitive. Successful originating stations whose signals are in demand by distant cable operators will be competing more vigorously with today's networks for national and regional advertising. Local broadcasters will face the greater competition of additional channels

III. ORIGINATION OF PROGRAMMING BY CABLE OPERATORS

It is the potential for program origination that has generated much of the interest in cable as a means of achieving greater diversity, with perhaps a far greater degree of "localism" than is possible with over-the-air broadcast. In the words of the FCC:

CATV program origination offers promise as a means for increasing the number of local outlets for community self-expression and for augmenting the public's choice of programs and types of service, without use of spectrum. Whereas television broadcast stations are usually located in or near a central community and are intended to serve a much broader area encompassing other communities, almost every community of any appreciable size could have its own CATV system and therefore its own local outlet.¹

Using low-cost cameras and other studio equipment, many cable systems are already originating. According to one survey of 1,048 systems, more than one-half (586) provide "automatic" originations (primarily a weather channel or a news ticker service); 329 provide other film, video tape, or live programming; and 183 accept commercial advertising.²

In October 1969 the FCC decided to permit originations without restrictions on program content; furthermore, it has established a rule that after January 1, 1971, all cable systems serving 3,500 or more subscribers must originate program material "to a significant extent." In the same rulemaking, the Commission looked with favor on the eventual interconnection of cable systems as a means of developing new regional and national networks.³

Since cable is already liable for full copyright for whatever material it originates, the issue of unfair competition raised by the

¹FCC Notice, op. cit., p. 3.
³First Report and Order, Docket 18397, October 27, 1969, pp. 4 and 19; henceforth referred to as the First Report.
The public interest would be served by encouraging CATV systems to operate as common carriers on some channels. CATV operators should be able to furnish studio facilities and technical assistance as part of the service, but should have no control over program content except as may be required by the Commission's rules and applicable law.¹

A third area of debate concerns the extent to which cable operators should be permitted to sell advertising. Of course, broadcasters also oppose sales of advertising by cable. With unregulated cable growth, broadcasters fear that their stations would suffer a triple threat: import of distant signals would fragment local markets and erode the local audience; origination of mass appeal programming by cable, supported by subscriber fees, could erode the programming base as well; and sale of advertising by cable systems would enhance the ability to siphon away programming that much more and would compete for the advertiser's dollar at the same time. Nevertheless, the FCC has ruled that cable operators are to be permitted to advertise on their origination channels subject to the restriction that advertising may be inserted only during "natural breaks" in programming.²

A fourth area relates to the advisability of restrictions on cable as a form of pay or subscription television, that is, special channels or programs made available to cable viewers for an additional sum over and above their monthly subscription fee. In 1968 the FCC adopted measures to restrict the kinds of programming that could be carried on pay television in order to protect the "free" television service supported by advertisers. However, the rules relate only to over-the-air broadcast. In the 1969 First Report, the FCC decided not to impose similar safeguards on cable systems, but rather to leave the matter open for further consideration.

In this section we shall address a number of points relating to the above categories, specifically (a) the advisability of requiring

¹First Report, p. 9.
²The Commission interprets natural intermissions or breaks to include those at the beginning or the end of a particular program, or at an intermission in the program material beyond the control of the cable operator. First Report, p. 24.
program originations along the lines ruled by the FCC, (b) the question of whether advertising sold by the cable operator should be permitted not only on origination channels but also on broadcast channels the cable operator carries, (c) the question of whether originations by the cable operators should be limited to one channel, (d) the role of cable in pay television, and (e) the role of common carrier channels. Since all of these areas are the subject of continuing work at Rand, they will be treated here in only a very brief and general fashion.

REQUIREMENTS IMPOSED BY THE FCC FOR ORIGINATION

Several comments are in order with respect to the FCC's recent decision to require originations. First, it is curious that in its requirements the Commission does not distinguish between local live originations, and the use of non-local programming carried on film and video tape or provided by interconnection into regional or national networks. The Commission makes clear that its concept of "significant extent" would include local live (or delayed playback) originations for which the cable operator would need a camera, video tape recorder, and other studio equipment. Moreover, it notes that this aspect of the origination requirement would have the desirable effect of encouraging the availability of equipment for use by others originating on common carrier channels. But the Commission also states that "we do not mean to suggest that origination to a significant extent could not also include films and tapes produced by others, and CATV network program- ming."¹ Thus, a station could satisfy its obligation, at least in part, by carrying programming of precisely the same sort that it could also obtain through carriage of broadcast signals. (The only difference is that any advertising carried on the origination channel is permitted only during natural breaks, while the signal originated by a local or distant broadcasting station is not subject to such restriction.) To the extent that cable operators satisfy the requirement to originate "to a significant extent" by bringing in outside programming, the effect on the viewing public and on local broadcasting stations would

¹First Report, p. 20.
be much the same as that of the cable system simply bringing in, at least part-time, an additional distant broadcasting signal. Thus the FCC rule, as it is now stated, has much the same effect as an FCC requirement that an outside broadcast signal be carried -- an anomaly in that such a requirement for compulsory carriage of distant signals is quite foreign to FCC thinking; the trend has been much more toward restricting rather than requiring carriage of distant signals.¹

If an origination requirement is to be imposed at all, it would seem more reasonable to impose it solely in terms of local live (or delayed) origination. For it is this kind of origination that would provide the "localism" that FCC policy has sought to promote since the earliest days of radio; it is this kind of origination that gives cable the unique capability to gear its programs to the needs of small communities in a manner infeasible through conventional broadcast; and it is this kind of origination that would employ cameras and other studio equipment usable by other groups desiring access to common carrier channels.

Moreover, compliance with this requirement should be judged in terms of the time of day and day of the week the programming is presented. It is not enough to offer the viewer locally originated programs at 8:00 AM on a Sunday morning or at 2:00 PM on a Tuesday afternoon. If the requirement is to go beyond anything more than window dressing, the needs and convenience of the viewer must obviously be taken into account.² Of course, such a requirement in itself would

¹It is true that the FCC's restrictive attitude toward use of distant signals arises out of its concern that non-payment by cable operators constitutes unfair competition with local broadcasters. However, even if the payment issue were fully resolved with copyright liability imposed for reasons discussed previously, the notion of compulsory carriage of distant signals would probably remain quite foreign to FCC thinking.

²It is notable that despite all the FCC's concern about "localism," the Commission requires only crude reporting by stations about the amount of local programming they do, in fact, provide. In its license renewal form, the Commission asks the station to list for a past composite week selected by the Commission, the number of hours of programming by source: local; network; and recorded. Each of these is broken down by the three time periods 8:00 AM to 6:00 PM, 6:00 PM to 11:00 PM, and all other hours. No distinction is made between weekends and weekdays, and no distinction is made between a 6:00 PM dinner hour and an 8:00 PM prime time.
not preclude carriage of other programming -- whether by distant broadcast signals, connection into a cable network, or by replay of film and video tape. But it would convey a more precise distinction between those activities that do provide localism, and those that do not; hence those that should be required (in accordance with FCC philosophy) and those that should merely be permitted or encouraged. It would also erase an artificial distinction in FCC treatment between two forms of making available outside programming to the cable subscriber -- either by cable carriage of a broadcast signal or by originating directly.

The Commission's requirement for origination is one that would appear rather easy for cable systems to meet, even if the requirement were limited to local live programming shown at times of the day convenient for the viewer. Even in the absence of a formal requirement, many systems already originate in a manner envisioned by the FCC simply because they feel that origination enhances the appeal of the overall cable package to attract additional subscribers. Moreover, about 70 percent of the systems that do originate are fairly small in size, embracing fewer than the 3,500 subscribers specified as the breakeven point by the Commission. The critical element is that the costs of origination are not large, even for small systems, so long as the performers, producers and writers are "volunteers."¹ That is, a world of difference exists between televising a local school board meeting that might require a camera and a technician, and televising a mass entertainment performance designed to the standards of conventional broadcast. Cable operators may have little difficulty in satisfying all or most of their responsibilities to originate to a significant extent simply by inviting local political candidates to appear before the camera, televising local community affairs meetings, and televising meetings of the City Council.

In addition, the cable operator has an advantage over the broadcaster in complying with requirements to originate during convenient times for the viewer. The broadcaster is understandably reluctant to

¹An excellent summary of cost data is contained in the First Report, pp. 11-16.
suffer the loss of revenue entailed in deleting a prime time entertainment program and inserting a local program catering to a smaller audience; the cable operator is free to insert the local programming in prime time while simultaneously carrying the popular entertainment channel.

Although the present origination requirements are framed in a manner to have no more than a mild impact on cable operations, future rules could quite conceivably be more stringently designed to include both origination requirements even by quite small systems, and a severe interpretation of "significant extent"; in other words, requirements imposing a substantial burden on cable systems. A troublesome aspect of regulations designed to promote or require particular activities is that they are frequently predicated on the notion that they are somehow costless to the public -- that the financial burden imposed on the regulated firm, be it a cable system, broadcasting station, or whatever, will be covered out of the "surplus" profits of the enterprise. Although instances of siphoning surplus profits for the public welfare sometimes occur, the strategy must be employed with great care. In many cases, the profit of the regulated firm may not be all that excessive, and even if profits exist the requirement may serve to encourage the firm to forgo other activities that also would be publicly beneficial, perhaps even more so. Thus, to impose stringent origination requirements on a cable system might have the effect of its building a plant with fewer channels usable for common carrier purposes, a plant less costly but of lower technical standards, or a plant whose cost requires a higher monthly subscription fee than would otherwise be the case.

Further complication arises from the fact that the need for localism varies considerably from one locality to another, depending on the adequacy of the local press, the number of nearby radio and television stations, the adequacy of local transportation as a partial substitute for communications, and other factors. Many instances arise in which a uniform national regulatory policy confers only modest or zero direct benefit to some localities, while imposing a concealed loss in the form
It can be argued that advertising is the only feasible basis of widespread commercial support of over-the-air television while cable systems do have an added advantage in being able to tap directly into subscriber fees. Therefore, according to this view, the advertiser base of broadcasters should be protected by prohibiting cable from advertising during programs brought in from the outside, but permitting cable to grow on the basis of subscriber revenues plus whatever advertising revenues can be derived during local live origination. This approach would give the cable subscriber greater diversity since he would have a choice between programming that contains commercials, inserted conventionally or during natural breaks, and programming entirely free of commercials offered by cable operators themselves.

Beyond the pros and cons of advertising on origination channels, it is important to note the possibility of the cable operator deleting the advertising on distant signals he carries and inserting his own advertising. Since cable operators do not now pay for distant signals, deletion and insertion of advertising generally would be regarded as sheer piracy of programming and clearly unfairly competitive with broadcasters, as mentioned early in Section II. Therefore, this possibility has not been taken seriously either by the FCC or by other groups. However, if cable operators face copyright liability in the future, it is safe to predict that this question of deletions and insertions will become one of central concern. The cable operator will likely argue that his ability to pay would be enhanced if he were afforded the option of deleting advertising having little value to distant originating stations in his own local market, and inserting his own advertising having greater value in the local market.

If the cable operator is given the option of deleting and inserting advertising, the problem of advertising erosion discussed in Section II would be eliminated, with the base of advertiser support tending to expand rather than to contract. Permitting flexibility in inserting advertising would enable finer pinpointing of market coverage, thus enhancing the value of television to local, regional, and national advertisers. Moreover, the viewer's welfare would tend to increase
In general, however, it would appear that rather than a one-channel limitation, a more desirable result would obtain if the restriction on origination channels were related to the total channel capacity of the system in question. If it offers, say, 5 to 12 channels, as is the case with most cable systems in service today, then a limitation to one channel may be eminently reasonable. But in cases of 20 or 40 channel systems, some of which are being built today, origination on several channels may be in better accord with the public interest. One of the most notable advantages of such large multi-channel systems is the possibility of a wide range of programming on a repeat basis to suit the convenience of the viewer. For example, the Sunday afternoon educational and cultural offerings might also be made in prime time during the week. Or a popular movie may be shown not once but perhaps several times during the week. Although the cable operator would control the content of several channels, the percentage of the total channels he would control would be no greater and perhaps would be smaller than the number controlled by existing stations.

Nevertheless, the use of several channels strikes some observers as unfair to the broadcaster. As one official has said, "It seems to be only reasonable that if cable competes with the local broadcaster, who is obviously on just one channel, the cable system should also be limited to just one channel. Why should cable systems have more channels than the local stations with which they are competing?"¹ This concern does not seem well founded. It is true that since broadcasters are limited by the duopoly rule to one channel, they would be restricted in competing with multi-channel origination systems. But the reason for the duopoly rule is that, given radio spectrum limitations, only a few channels are available over the air in any given market. Since competition is in any event severely limited in these circumstances among broadcasting stations, it would be viewed as intolerable in most quarters for a single entity to control the content of more than a

single station. If, by some magic, there were no spectrum limitations and 20 to 30 broadcasting stations could be operated side by side in a single market, then the duopoly rule would have made much less sense. Since cable is able to break through this channel constraint, the duopoly rule loses its force here as well. To say that a cable operator originating on more than one channel would be unfairly competing with a broadcasting station operating on only one, is analogous to saying that the subway train unfairly competes with surface bus transportation if it offers greater speed. Cable involves a different technology from that of broadcast, with its own advantages and disadvantages. It should not be saddled with restrictions designed to cope with the peculiarities of the other technology.

As a practical matter, a one-channel constraint would probably pose no serious problem in the near term. In the present early stage of development, few cable operators will want to originate over more than one channel. Nevertheless, it is important to formulate rules that do not in the longer term become unnecessarily restrictive. Rather than setting a one-channel rule, the FCC might formulate an alternative relating the maximum permissible level of origination to the total level of programming made available from all sources by cable -- for example, a "10 percent rule" under which if, say, 20 channels averaging 15 hours a day are coming into the home, the cable operator might be permitted to originate up to 30 hours per day, or 10 percent of the total, on two of the channels.

THE USE OF CABLE FOR PAY TELEVISION

Pay television, or subscription television as it is frequently called, is generally defined as a system in which the viewer is required to pay on either a per-program or a series-of-program basis, as an alternative to watching free advertiser sponsored fare. Cable television has frequently been referred to as "back door" pay television since only those who subscribe to cable are able to obtain a wider variety of programming than that available over the air. (This observation is accurate in the same sense that purchase of a tall antenna,
enabling the viewer to obtain programming from more distant stations, might also be referred to as "back door" pay television.) But going beyond this, to the extent that subscribers' fees are tapped to support programming, cable television does take on more clearly the characteristics of pay television as it is commonly defined. More generally, one of the most significant characteristics of cable growth in the longer term may be to make pay television much more economically feasible than would otherwise be the case. In the past, the prospects for pay television have been clouded by the high costs of scrambling and decoding over-the-air signals. In one system now being proposed, the viewer would pay $39 annually for the rental of a decoder and billing machine, with additional major costs incurred in the scrambling equipment located in the studio, and in the time charges paid to the station for the scrambled signal broadcast. According to one projection presented before the FCC, about 20 percent of the total collections from each subscriber (estimated at $106 annually) would be channeled to program product. The remainder would be absorbed largely in "transactions costs" -- scrambling, decoding, billing, and selling expenses -- along with station time charges.¹

As a possible alternative, the use of cable seems attractive because it would avoid the large costs of scrambling and decoding signals. A special channel could be offered to subscribers at an extra monthly fee, with filters installed along the cable to blank out the signals to those cable subscribers who do not wish the extra service. One organization has already announced plans to provide four such special channels along with regular cable service. These would include a movie channel, an instructional channel (including languages, physics, chemistry, and speed reading), an informational channel (including news, public affairs, and documentaries), and a professional channel for the medical profession.²

¹The estimated costs for proposed pay television systems are included in Fourth Order and Report, Over the Air Subscription Television, December 13, 1969, Docket 11279, Appendix B, p. 6.
One of cable television's potentials lies in breaking the tie between advertiser support and programming. Perhaps the most severe bottleneck in the television industry has been the almost exclusive reliance on advertising to foot the bill. One has reason to doubt whether the multiplication of channels, due to the continuing growth of commercial VHF and UHF stations, will provide the variety and appeal to minority audiences that has been so widely hoped. So long as advertising revenues are required to support additional channels, the incentive to cater to mass audiences will continue to be pressing. Given the high costs of professional, quality programming, and the fact that an advertiser cannot regard a viewer as being worth more than a few pennies per hour, the small audience (numbered in the tens or hundreds of thousands, rather than in millions) is likely to be disregarded in many of those cases where the small audience would have been quite willing to pay for the additional programming.

To be sure, the growth of pay television via cable does raise at least two major issues. First, the extent to which it would "siphon" or bid away programming that would otherwise have been available over free television supported by advertiser revenues. (This aspect will be treated briefly in Section IV.) Second, pay television raises serious problems with respect to control by the cable operator over rates and services to the viewer. If the public had no good alternatives, the operator of a single cable system operating under exclusive franchise to the city would be in a position to charge abnormally high prices for the special channels and to pocket much of the revenue as excess profit.

THE ROLE OF COMMON CARRIER CHANNELS

In view of concerns about excessive control by the cable operator along the lines mentioned above, increasing attention is being paid to the possibility of cable channels made available to originators of programming on a common carrier basis. This approach would involve non-discriminatory access to all users in accordance with the cable operator's published tariffs.
By separating the control of programming from the mechanics of transmission, common carrier operations would have several attractive features. First, groups unable to afford the time charges of conventional broadcasting stations would have access to television according to their own demands, rather than in accordance with the preferences of the cable operator himself. It is for this reason that the FCC looks with strong favor in its First Report on common carrier use.

Second, common carrier service could provide the subscriber with a broader choice of channels and services outside the control of the cable operator. In particular, extra-pay channels could be made available through outside originators who, competing among themselves, would make offerings available to the public under more attractive terms, even though the transmission facilities were operated by a single entity.

Third, common carrier operations would facilitate applications of cable in addition to conventional television service. The broadband capability of cable systems has frequently been mentioned in connection with home and office facsimile, information storage and retrieval, and other services combining television with voice channels and computer links for both one-way and two-way services. In the more distant future, perfection of low-cost, broadband switching capabilities would open up further possibilities of converting cable into a combination broadcasting and point-to-point system. Use of common carrier channels in the near term would provide valuable experience with respect to costs, regulatory problems, service problems, technical standards, and other aspects on which prospective new users could better plan and evaluate the opportunities at hand.

For our purposes, it is important to distinguish between "limited" use of common carrier channels in which one or a few such channels are included in an otherwise conventional television package offered to cable subscribers, and a "full" common carrier system in which all channels on the cable are operated under common carrier rules. These two types will be considered in turn.
Limited Common Carrier Service

A salient characteristic of the limited form of service is that the relatively few outside originators presumably would pay for access to the cable, under the terms of the tariff agreement, without dealing directly with subscribers. That is, subscribers would pay a monthly fee, as they do now, for a package of local and distant broadcasting signals, plus perhaps a channel or two on which the cable operator himself originates and one or more channels on which programming is controlled by outside originators. The latter might include local political candidates, schools, and government agencies willing to pay some fee for access. (Of course, channels could be made available without charge to certain originators as some cable systems are now doing.)

The major potential problem of common carrier use involves regulatory aspects with respect to pricing, to definition and enforcement of non-discriminatory access, and to control of programming content. First, the question of appropriate pricing. A salient characteristic of cable service is that it, like telephone and many other services, is subject to so-called economies of scale: the average cost per channel in a system falls as the total number of channels increases. For example, to build a system carrying one channel into the home might involve, say, $100. But each additional channel added to the system might run to only $5. Thus a 20-channel system would cost $195, or an average of less than $10 per channel compared with $100 for the first channel. If a channel is priced at $5, revenues would cover the additional or "incremental" cost of installing the channel, but would contribute nothing to the heavy overall cost of the system. Were the cable operator to price each channel at $5, he would suffer a deficit of $95. Under such circumstances what constitutes a fair price? To what extent should particular channels be expected to cover a share of the initial investment in addition to their incremental cost? Should channels that are used for particular purposes, such as for education and instruction, be priced at incremental cost, or even below incremental costs? Which channels should be expected to bear a more than proportionate share of total cost to compensate for the preferential treatment accorded others?
Another problem involves enforcement of non-discriminatory access to common carrier channels. In the case of opposing political candidates, for example, it is not enough to ensure an equal fee and equal time to each, for the candidate wants exposure not to a television camera but to an audience. He would have good reason to be upset if his opponent's speech follows a popular entertainment program while his own follows a lecture series aimed at the medical profession.¹

If cable operators open their doors to numerous political candidates and others who usually would not have access to the television medium (and that certainly should be a major objective), the task of designing well-conceived guidelines to ensure non-discriminatory access will be paramount. The task will be complicated by the fact that discrimination involves a number of dimensions whose effects are not easy to quantify or to predict.

Also, the issue of content control is troubling. As the National Association of Broadcasters has stated:

CATV is an embryonic mass medium which one day may be capable of pouring into the American home, school and office, not just facsimiles of newspapers, job and literacy training, messages of local governments, etc. But it can also transmit borderline pornography, deceptive and irresponsible advertising, subversive propaganda, the outpourings of the lunatic fringe, and the appeals of countless others whose appearances have thus far been minimized by the broadcasters' responsibility to program within the public interest standards of the Communications Act and the NAB's Codes of good Practices.²

As another aspect of content control, the question arises about the extent to which, if any, the FCC's rules on fairness and equal time

¹Here we have the problem of "adjacencies" with which broadcasters and networks are painfully familiar. The audience that a particular program achieves is not just the matter of its own appeal, but also of what precedes it on the same channel. Thus, it has frequently been observed that broadcasters and networks are reluctant to carry a program of low audience appeal, particularly during prime time, because it tends to have an unfavorable effect on subsequent programs carried on the same channel.

should be applied to common carrier channels as they are today applied to broadcasters. In its First Report the FCC decided that these rules would be applicable to the originations of cable operators themselves. But the application of these rules on common carrier channels, including a clear delineation of responsibilities of the cable operator and of originators, remains a subject of debate.

Would the FCC have the responsibility for passing on the structure of rates, ensuring non-discriminatory access, and overseeing program content for each cable system? Such a burden would be formidable in comparison with its present day functions in broadcast and in inter-state common carrier regulation. Already more than two thousand cable systems are in operation, and additional thousands may emerge over the next few years. Or would this responsibility fall on the shoulders of state and local governments? State and local agencies have never been noted for having adequate staffs or other prerequisites for effective regulation. Past experience in the regulatory field does not encourage optimism that extensive regulation would have strongly beneficial effects if applied to the cable television industry.¹

Full Common Carrier Systems

In principle, it would be possible to operate a cable system under which all channels are made available on a common carrier basis with the operator confined solely to transmission in the same manner as a telephone company making its facilities available for hire by outsiders. As one economist has expressed it,

What is proposed here is, in effect, the vertical disintegration of message sources from message carriers, allowing the carrier to take advantage of economies of scale in the transmission process, and at the same time providing an opportunity for considerable competition among message sources. The medium is to be divorced from the message.²


Common carrier access to all users of cable, including local and distant broadcasters, would involve the cable operators standing ready to provide non-discriminatory access to each station in accordance with a fee schedule, and with each station negotiating with subscribers as to what is to be offered and at what price. This broader application of the common carrier concept stands in contrast to limited common carrier operations in which the originator of the message, say a local political candidate, deals only with the cable operator in accordance with an established fee schedule for access to the system. In full common carrier systems, some or much of what is carried (such as local and distant broadcast signals and originations of copyrighted, syndicated materials) would involve payments by subscribers rather than, or in addition to, those of the originator.

Thus, a distant broadcasting station, desiring access to the local market, would establish a monthly price for a channel that the subscriber could either accept or decline. From the subscriber and advertiser revenues, the broadcasting station would pay the cable operator for the lease of the cable channel, handle copyright clearance, and cover other expenses. Perhaps the station would arrange to delete its own centrally-originated advertising and to have inserted other advertising more appropriate in various markets covered by cable systems carrying its signal. Some stations, especially local ones, strongly desiring access to the local market presumably would be willing to make their channels available free to the subscriber, with advertising revenues sufficient to cover the lease charge for the cable channel and other expenses.¹ Independent program originators might also lease channels, as for first-run movies, which subscribers would select at an additional fee. (Here we have the same case of pay television noted previously, but with the channels controlled by outsiders, rather than by the cable operator.) Depending on what the subscriber selects, he would pay a monthly bill similar in format to one for long distance

¹In line with the FCC's Carriage Rule under which cable systems are compelled to carry all local signals as a prerequisite to carrying distant signals, the cable lease charge for local stations might be zero.
telephone calls. With competition among program originators, including broadcasting stations, the problems of excessively high fees to subscribers and problems of concentration in media control would be alleviated.

However, other complications emerge. First, the regulatory difficulties mentioned above with respect to limited common carrier service would be all the more severe. Appropriately pricing all instead of just a few channels, ensuring non-discriminatory access, and overseeing controlling program content would impose additional burdens on the regulatory machinery.

Moreover, the issue of regulating cable operator profits would arise. Today, the profits of cable systems are not subject to formal regulatory review. But the profits of common carrier entities, including telephone companies, are subject to formal review and control. As one aspect of profit regulation, the criteria and the mechanisms through which the total capacity of a cable system is to be determined would have to be defined. So long as extra channels are available, it is easy enough to accommodate new users. But what happens if the system is already filled to capacity? Especially, what corrective machinery or safeguards are justified to prevent the cable operator from building a relatively low capacity system in order to extract relatively high lease charges from originators and thereby generate higher profits for himself?

In addition to regulatory problems, full common carrier operations would generate additional transactions costs -- possibly substantial ones. We have already seen that cable offers the possibility of one or a few special pay channels at a relatively low transactions cost. In such cases, the cable operator would install filters along the line to direct the extra channels to those subscribers who elect to pay.

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1 This does not mean that numerous separate common carrier channels would necessarily involve a higher monthly fee than conventional cable service; but only that payment would be itemized by particular channels selected by subscribers, rather than consisting of a lump sum fee to the cable operator for a single package of service.
But here, all channels for which subscribers pay would need to be filtered (or some other means found) to perform this function. Additional billing, selling, and clerical expenses would also arise.

All this is not to say that these difficulties are insurmountable. The attractive features of full common carrier use are sufficiently great to merit further, more detailed analysis. In this connection, one or a few experimental cable systems, operating in the near term on a full common carrier basis, would provide a better understanding of the magnitude of the regulatory burden, the transactions costs, the reactions of the viewer, the operating problems, and other important dimensions.

At the present early stage of cable growth, it would seem sensible to permit the cable operator himself to originate (perhaps restricted to a percentage of total capacity as discussed earlier) in order to determine more precisely the attractiveness and the availability of programming that emerges and the reactions of subscribers. In the course of time common carrier operations might be encouraged, or perhaps even required, if the cost of cable operation, the needs of viewers, and the opportunities for new programming are such that many groups desire access to the medium. With continued growth, the problems, if any, arising from cable operators having control over numerous channels will become clearer. If these problems seem severe, then a more extensive common carrier operation might be imposed, perhaps to leave the cable operator solely in the transmission business, and not as an originator or controller of what is carried.

* * *

In conclusion, it may be useful to recapitulate several major points.

First, it is important to distinguish, in a way the FCC has not done in its recent ruling, between local live origination and origination of materials brought in from the outside by the cable operator. Requirements imposed by the FCC to originate and permission to include
advertising are more clearly justified in the former category than in the latter.

Second, although the new FCC requirement to originate "to a significant extent" will probably have no more than a mild effect on cable operations, more severe requirements contemplated in the future carry potential danger of losses as well as benefits to the viewing public.

Third, a major issue for the future will involve the degree to which cable operators are permitted to delete advertising on distant signals and insert their own. While the practice would expand the financial base for programming, and hold appeal for copyright owners, it would expand the level of control by the cable operator over additional channels.

Fourth, cable may have a major role in originating on specialized channels with additional fees to subscribers, but with the danger of excessive control by the cable operator over channels offered to the viewing public.

Fifth, the FCC attempts to limit control of programming by the cable operator would better take the form of limiting his originations to a given percentage of total programming, rather than the form of a one-channel limitation now being proposed. Addition of common carrier channels would also serve to diversify control, but at the expense of a potentially severe regulatory burden and of higher transactions costs.

Both here and in the preceding section on treatment of broadcast signals, we have noted in a number of contexts the competitive threat that cable poses for broadcasting. In the next section we shall bring together elements from the preceding discussions in order to deal explicitly with the question of a well-conceived future public policy toward broadcasting.
IV. THE ISSUE OF PROTECTING LOCAL BROADCASTING

THE PUBLIC INTEREST IN BROADCASTING

In the modern business world we generally have no compelling reason as a matter of public policy to be greatly concerned about the competitive threat of one business activity toward another — whether it is one manufacturer's jet aircraft competing with those of another for business, automobiles competing with buses, or synthetics competing with cotton. In such cases, the outcome is guided by the more or less free play of market forces. But here the health of the broadcasting industry is an issue, for two reasons:

First, if the growth of cable under the conditions outlined earlier forced some broadcasters off the air or prevented other stations from being constructed, the loss to society could exceed the benefits of cable. The benefits to viewers of commercial broadcasting are not well measured by the revenues of broadcasting. These revenues, derived from advertising, reflect instead the value of over-the-air broadcast as an advertising medium. The case of non-commercial television is similar. The benefits to viewers are only tenuously related to the magnitude of voluntary contributions, foundation grants, government support, and other funds available for non-commercial service.

Were it feasible for viewers to pay directly for television, as they do for bread and automobiles, their willingness to pay would be a measure of the benefits they receive. Although, as a potential buyer of an advertised product, a viewer is worth only a few pennies per hour to the advertiser, the benefit to the viewer of a particular television program could be many times that amount. Were viewers confronted with the choice of paying directly for the programming or going entirely without, quite possibly they would be willing to pay an amount far in excess of current broadcaster revenues. The problem is not only that some members of society would be forced to pay a monthly fee for programming they otherwise would have received free, but also that
others living in rural areas uneconomic for cable to reach, conceivably could be denied all television service.\footnote{It is true that there is another important value not measured in the market place -- the value in alternative uses of the radio spectrum used by television. Since television stations obtain their right to use spectrum free, the value of the spectrum in its best alternative uses should properly be subtracted from the benefits of television to viewers in order to derive the net benefit of television to society.}

Second, the continuation of over-the-air broadcasting would likely serve the public interest in providing some competitive check against the policies of the cable operator with respect to fees and service. Those viewers unsatisfied with cable service would continue to have an alternative by not subscribing to it. Moreover, since cable must carry all local signals under the FCC's Carriage Rule, the continuation of over-the-air stations in the hands of other entities would ensure to cable subscribers as well a diverse source of programming whose content is not wholly controlled by the cable operator.

Given the nature of present day and easily foreseen cable technology, it appears that cable systems will continue to operate as monopolies. As with gas, water, and telephone service, it would be grossly uneconomic for cable operators to compete with each other for particular blocks in a neighborhood. Although a number of cable systems operate in a given metropolitan area, they do so side by side with each holding a franchise within a specified area. Were cable to grow large enough to drive out most or all broadcasters, the monopoly problem would become particularly worrisome. A single entity would have substantial latitude in selecting the content of programming going into the home, and adjustments in quality and quantity of service and in subscription fees could generate substantial excess profits. Common carrier use of cable channels would alleviate this problem, but at the expense of a regulatory burden as discussed in Section III. With or without the existence of common carrier channels, access by broadcasters to viewers independent of whatever conditions are imposed on originators using cable would provide valuable competitive checks on cable operations.

Unfortunately, formulation of well-conceived public policy in this area is severely handicapped by a lack of good quantitative knowledge
-- as distinguished from conjecture, theory, fear, and concern. In the absence of payments by television viewers, we cannot satisfactorily estimate the value of "free" television; in particular, we do not have a good notion of the value of "localism" that has been so much the center of FCC policymaking.\(^1\) We do know that stations make available a number of hours per week for local programming, but the value of the programming to the viewer (hence what it is worth to protect) is unclear.

Although continuation of broadcast as a competitive check on cable operations would be worthwhile, how worthwhile? Clearly, there is some limit beyond which one would not want to go in protecting a particular industry in competition with others. It is well to note that the history of regulation is replete with examples of ill-advised attempts to protect particular activities when they were threatened by others.\(^2\)

The quantitative degree to which continued cable growth to particular levels will jeopardize existing stations or discourage the emergence of new ones is no less unclear. We do know that, in principle, cable can pose a substantial threat to over-the-air broadcasting. In both the United States and Canada audience fragmentation is occurring, but in neither country has clear evidence emerged to suggest that

\(^{1}\)It is true that one study, The Social and Economic Benefits of Television Broadcasting, by Robert Nathan Associates, Washington, D.C., 1969, estimated the value of free television at over $100 billion dollars annually. Unfortunately, the study suffers from serious methodological problems. The $100 billion figure is derived not from what viewers would have been willing to pay for the programming, but by what they would have had to pay to see the equivalent programming by the next best method; that is, comparing the free movie over television with the admission price to the theater. This approach is analogous to having estimated the value of high-capacity transatlantic telephone cable (in the era prior to the advent of communications satellites) at some billions of dollars on the premise that the next best way of providing high-capacity telephone service across the Atlantic was by terrestrial microwave relay -- that could have been provided at some enormous cost, by building at 20 or 30 mile intervals across the Atlantic artificial islands on which microwave towers would be erected.

\(^{2}\)For a discussion and numerous references, see Posner, op. cit.
revenues or profits of stations have yet been significantly affected by the growth of cable.¹

RESOLVING THE CONFLICT: A BASIS FOR OPTIMISM

The Experience in Radio

For three reasons, there is a basis for optimism that cable can be permitted to grow and to evolve under liberal FCC rules, without seriously harming over-the-air viewing. First, the concerns noted earlier are similar to those in the post-war period when great apprehension was expressed that television would surely bring the eclipse or demise of radio broadcast. Competition by television for audiences, performers, and the advertiser dollar was a formidable threat. Yet, by 1968, the number of commercial AM and FM radio broadcasting stations had grown to over 6,000, compared to less than 3,000 operating in 1949. During the same period, total revenues had grown to $995 million -- more than double the revenues of $415 million in 1949. Although profits suffered a slump during the 1950s and the early 1960s as a consequence of television's inroads, they have grown rapidly in recent years; by 1968 total profits of $117 million exceeded by more than 50 percent the profits of $71 million recorded in 1950.²

It is true that the functions of radio have substantially changed over the years under the impact of television, with more emphasis on

¹See the analysis of audience fragmentation in the filing before the FCC of Maximum Service Telecasters, Docket 18397, September 5, 1969, Exhibit 1. A discussion of audience fragmentation in Canada is contained in Canadian Broadcasting Corporation, Ottawa, "A Measure of the Major Impact of Cable TV in Canada," revised October 1968.

²FCC, AM-FM Broadcast Financial Data — 1968, Table II; and Statistical Abstract of the United States, 1969, pp. 342 and 501. Notably, the rise in profits from 1950 to 1968 is not simply a paper increase reflecting long run inflationary trends in the economy. The 50 percent increase in profits exceeds the 27 percent rise in the U.S. wholesale price index during the same period.
Table 5  
BROADCAST EXPENSES OF NETWORKS AND TV STATIONS IN 1968<sup>a</sup>  
(in millions of dollars)

<table>
<thead>
<tr>
<th>Category</th>
<th>Technical</th>
<th>Program</th>
<th>Selling</th>
<th>General and Administrative</th>
<th>Total Broadcast Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Networks</td>
<td>$40.7</td>
<td>$816.3</td>
<td>$27.5</td>
<td>$75.5</td>
<td>$960.0</td>
</tr>
<tr>
<td>15 Network Owned and Operated Stations</td>
<td>23.7</td>
<td>90.1</td>
<td>26.6</td>
<td>28.8</td>
<td>169.2</td>
</tr>
<tr>
<td>407 VHF Network Affiliated Stations</td>
<td>93.3</td>
<td>254.2</td>
<td>76.9</td>
<td>223.6</td>
<td>648.1</td>
</tr>
<tr>
<td>79 UHF Network Affiliated Stations</td>
<td>11.2</td>
<td>19.3</td>
<td>7.4</td>
<td>20.8</td>
<td>58.7</td>
</tr>
<tr>
<td>Total, 486 Network Affiliated Stations</td>
<td>104.5</td>
<td>273.5</td>
<td>84.3</td>
<td>244.4</td>
<td>706.8</td>
</tr>
<tr>
<td>30 VHF Independent Stations</td>
<td>15.4</td>
<td>67.1</td>
<td>12.0</td>
<td>26.9</td>
<td>121.4</td>
</tr>
<tr>
<td>35 UHF Independent Stations</td>
<td>7.8</td>
<td>18.5</td>
<td>5.2</td>
<td>11.4</td>
<td>42.9</td>
</tr>
<tr>
<td>Total, 65 Independent Stations</td>
<td>23.2</td>
<td>85.6</td>
<td>17.2</td>
<td>38.3</td>
<td>164.2</td>
</tr>
<tr>
<td>Total, 3 Networks and 551 TV Stations</td>
<td>$192.1</td>
<td>$1,265.5</td>
<td>$155.6</td>
<td>$387.0</td>
<td>$2,000.2</td>
</tr>
</tbody>
</table>

Note:  
<sup>a</sup>Excludes satellite stations, part-time stations, and those with less than $25,000 of time sales.

Source:  
FCC, TV Broadcast Financial Data, 1968, Table 8.
The procurement and origination of programming by cable operators themselves may also give rise to complementary effects, to further offset the effects of cable operators bidding away or "siphoning" the best programming from broadcasters. To illustrate, consider the situation of movie theatres versus television broadcasting. It can be argued that not only do movie theatres compete for audiences, but they also bid away the best programming from television, insofar as first-run movies are "originated" in theatres and only years later shown on television. But the existence of movie theatres as a market for programming may also help television in sharing the costs of programming that otherwise would not have been produced at all. Perhaps, on balance, the TV industry is better off as a consequence of the existence of the movie theatre, despite the competitive effects, because more programming is available to it (at least on a delayed basis) than would be the case were it alone to bear the cost burden.¹

For movie theatres, on the other hand, the competitive effects outweigh the complementary ones: movie theatres benefit in the sharing of film costs with television broadcasting, but they are clearly harmed, on balance, as a consequence of the loss of audience to television. Even so, it is worth noting that the movie industry is surviving. Although average weekly audiences fell from about 60 million to about 40 million persons from 1950 to 1967, the number of theatres in 1967 was nearly as large as that in 1950 (18,000 versus 19,000); and total theatre receipts rose during the period by about 50 percent. It would be hard to argue that those who desire to see movies in theatres are seriously disadvantaged as a consequence of the competitive inroads of television.

Similarly, mutual benefits accrue between cable operators and over-the-air broadcasters. Programming originated by cable may also

¹For three of the seven major film distributors operating in the U.S., aggregate sales to television comprised about 16 percent, and to theatres 84 percent, of their total revenues derived from film rentals during the three-year period 1966-1968. These figures exclude film series produced specifically for television.
be made available to broadcasters at a cost lower than would otherwise be the case; general costs including selling and administrative may also be shared. Consider the following possibility: at some point in time cable systems originate programming and sell advertising, with the programs and advertising fed by microwave to broadcasting stations, particularly in rural areas, to cover over-the-air audiences. (The broadcaster deletes some of the advertising originated on cable and inserts his own, more closely tailored to his audience.) The cable operator covers the bulk of costs arising from program production, selling, and administration; the broadcasting station pays an amount commensurate with the size of additional audience covered— but an amount far less than if the station had done the job alone. In other words, if cable operators find it feasible to pick up the programming and advertising from a signal originated by a broadcasting station, and both the cable and the broadcasting station share the cost, it is no less feasible for cable operators to originate programming and sell advertising on a signal fed to a broadcaster, with both still sharing the cost.

It is not out of the question that even were cable systems to encompass 70 to 80 percent of the nation's homes, over-the-air service would continue to operate—with the number of stations perhaps equal to or even greater than that of today. Cable systems could carry the bulk of programming, selling, and administrative costs of the sort shown in Table 5. Broadcasting stations, with revenues perhaps 30 to 50 percent of those today, might nevertheless (a) cover their technical and other expenses, (b) contribute an amount commensurate with their audience sizes to cover national and regional programming obtained by tapping directly into cable, and (c) still undertake as much local programming as they do today (if not more, depending on future FCC requirements for "localism" in broadcasting). The costs of local programming might also be reduced through shared use with cable operators of studios, equipment and personnel.1

1It is important to remember that broadcasting revenues would not decline directly in proportion to the coverage of cable systems. Each station would benefit insofar as cable subscribers, as well as non-subscribers, have access to its signal. Moreover, as noted earlier,
These complementary effects would work most strongly if cable systems and broadcasting stations were held under common ownership. This observation immediately raises the issue (now before the FCC) about appropriate rules for cross-ownership. Because of its concern about concentration of media ownership and control the Commission is now considering if there are any conditions under which joint ownership of cable systems and broadcasting stations should be prohibited. This general issue lies outside the current Rand research program; however, we should note the following: If a cable operator is prohibited from owning a broadcasting station in his own market, but is permitted to own them in other markets, he would have an incentive to make his cable programming available to his distant broadcasting stations in competition with cable systems owned by other entities in those distant markets. If he is prohibited entirely from such ownership, he may nevertheless, with some additional difficulty, be able to reach agreement with owners of distant broadcasting stations for joint use of programming and perhaps advertising. In either case, he may find it advantageous to share local origination facilities with competing broadcasting stations in the same manner that, for example, competing airlines frequently share the use of airport facilities and equipment.

In short, depending in part on the Commission's eventual cross-ownership rule, a national system of television might evolve with two interconnected components -- cable and broadcast service. Although cable might achieve a predominant place in the system, extensive over-the-air service, including local programming, would continue to operate for the benefit of those viewers not served by cable.

* * *

Of course, it would not be wise to rest our analysis simply on the optimism expressed above. Despite the history of radio development in

some cable subscribers may have one or more portable receivers dependent on over-the-air service. Thus, cable coverage of 70 percent of the homes would generate, on the average, less than a 70 percent reduction in broadcaster revenues.
this country, despite the experience with cable in Canada, and despite the possibilities of complementary as well as competitive effects, it is important to evaluate measures that should or should not be adopted if the threat of cable growth to over-the-air service were to reach major proportions, and if it were decided as a social judgment that broadcasting should be protected. We shall begin by discussing several measures currently being widely debated — measures having serious drawbacks. These include (a) restricting originations by cable or interconnection into cable networks, (b) restricting the number of distant signals carried by cable, and (c) prohibiting leapfrogging in carrying distant signals. Subsequently, we shall consider other more promising approaches designed not to reduce directly the competitive effects of cable on broadcasting, but rather to stimulate the complementary ones.

QUESTIONABLE RESTRAINTS ON CABLE OPERATIONS

Restrictions on Originations and Interconnection

Although the Commission ruled in its First Report that cable operators may originate programming without limitations on quantity and content, broadcasters are currently expressing great dismay on grounds that the Commission's action "was premature, self-defeating and dangerous to the continued livelihood of free, over-the-air broadcasting." As mentioned in Section III, broadcasters generally do not oppose cable originations of local public affairs activities, but they are apprehensive about the competitive threat posed by cable operators moving into mass entertainment.

The favorable attitude expressed by the FCC in its First Report about the prospects for cable network interconnection are no less a concern. By permitting numerous cable systems to enjoy the advantages of simultaneous program distribution, interconnection poses that much more of a threat in siphoning away free television's most popular programming. The NAB-NCTA draft agreement of mid-1969 (see p. 31, footnote

1) would have prohibited cable systems from interconnecting to distribute entertainment-type programming competitive with that of broadcasters.

However, restrictions on interconnection and origination for the purpose of protecting broadcasters share a major drawback in that they would confer blanket protection to strong and weak stations alike, both in markets where cable poses a serious threat and markets in which it does not. Here it is important to bear in mind the enormous variability in profit levels among stations. For the industry as a whole (including the networks) the level of profit in 1968 ran to nearly 20 percent of total revenues. But for the 15 network-owned and operated stations (all VHF) the level of profit ran to about 40 percent of total revenues. For all UHF stations (affiliated and independent) a net loss was recorded equal to about 30 percent of total revenues (only 2 of the 37 independent UHF stations recorded a profit).\(^1\) Whatever threat cable does pose in the future will surely vary among particular stations and among particular markets. The general concern within the FCC and elsewhere is less with the VHF network-affiliated stations in major markets, but more with the independents, especially UHF. Yet, in order to protect these weaker stations, restrictions on originations and interconnection would also protect the profits of the strong, highly profitable ones -- at the cost of denying additional programming to cable subscribers.

### Restrictions on the Number of Distant Signals

Limitations on the number of signals that a cable may carry are of central importance in the current debate. In the FCC's proposed rulemaking, the smaller markets (those outside the top 100) could import a sufficient number of distant signals so that, together with local signals, the viewer would have access to three full network services, one independent station, and an undetermined number of non-commercial stations.\(^2\) Thus in a market served by two stations, both

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\(^1\) FCC, TV Broadcast Financial Data, 1968, Tables 3 and 5.

\(^2\) Generally speaking, carriage of distant non-commercial signals would be permitted as long as any local non-commercial station does not object.
of which are network affiliates, the cable operator could carry an additional signal of a third network affiliate, one of an independent station, and one or more of non-commercial stations. The NAB-NCTA draft agreement would have liberalized this restriction to include three network and three independent commercial services in both large and small markets. The rationale for limiting signals is clear enough: the larger the number of signals, the greater the threat to local stations.

At issue in the debate is the question of what does and does not constitute "adequate service." The FCC's proposed rule is predicated on one notion of adequate service, the NAB-NCTA draft agreement on a somewhat different notion. The problem is that one's point of view of what is adequate is very much colored by what he is accustomed to. Had only one network grown up in this country, adequate service might now be defined in terms of this one network plus one or two independent signals. Had a half-dozen networks emerged, adequate service would probably have been defined to include them. The large channel capacity of cable could provide, through time, a far wider range of programming to satisfy a broader spectrum of tastes than is possible today. If subscribers want four, eight, or ten distant signals (and that, after all, is the only reason the cable owner would make them available), why deny subscribers their wishes, so long as full copyright payment is made by the cable operator for each signal he imports? Rather than fully exploiting the potential of cable, such restrictions on use of distant signals would tend to perpetuate into the indefinite future a level of service deemed "adequate" in 1970.

Moreover, the greatest protection to broadcasters would be accorded in the largest markets containing the most profitable VHF stations, and the least protection accorded in the smaller, less profitable markets.¹

¹Of the $358 million earned by the 619 broadcasting stations in 1967, about $187 million — more than one-half of the total profit — was accounted for by only 56 stations in ten of the largest markets; the other 563 stations shared the remaining $171 million of profit. Compiled from FCC, TV Broadcast Financial Data – 1967.
In a large market with, say, five stations, the NAB-NCTA formula would have permitted only one additional signal — which would impose a relatively small competitive threat against the five existing ones. But in a small market with, say, two stations, the rule would permit four additional signals that, together, would constitute a more serious threat. Not only do these stations have lower present-day profits as a cushion against new competition, but they would also suffer greater audience fragmentation than would many stations in larger markets.

One frequently voiced rationale for such a rule, however, is that new UHF stations are most likely to emerge in the largest markets; hence, to stimulate their development the greatest protection is needed in those markets. Here we return to the problem of blanket coverage: in order to protect UHF in the largest markets, a restriction on distant signals would also protect the very profitable network-affiliated VHF stations in those markets. At the same time, stations in smaller cities serving rural areas could conceivably be seriously disadvantaged. If one objective of public policy is to protect over-the-air service in rural areas, a restriction on use of distant signals based on some concept of adequate service would contribute little; rather, it would serve largely to perpetuate levels of existing profits in major metropolitan areas.

Finally, it is curious that in its First Report, the FCC favorably views the possibilities for interconnected regional and national cable networks as a means to greater programming diversity; yet it takes a dimmer view of unrestricted import of distant signals. However, one can reasonably expect that originating stations whose signals are in strong demand will themselves evolve into origination centers for what are, in effect, cable networks. That is, they will tailor their programming and their advertising appeal to the distant markets. Perhaps these stations will enter into agreements whereby cable systems delete advertising originating on the signal and insert their own, with revenues combined from cable systems and originating stations for procurement of programming. In terms of future regulatory policy, it should make no difference whether an entrepreneur "announces" the formation of his cable network and proceeds to originate programming relayed by
microwave or perhaps by communication satellites to scattered cable systems around the country, or whether an independent broadcasting station originates programming that is distributed via microwave or communication satellites to cable systems around the country seeking distant signals. Furthermore, if a major objective is to protect some level of over-the-air broadcast, the use of a broadcasting station for origination would provide over-the-air service at least within its own local market, while the formally organized cable network would generate no over-the-air signals at all.

Prohibitions Against Leapfrogging

In its proposed rules, the FCC is considering a restriction under which distant signals may be carried only from the most proximate sources. That is, nearer stations must not be jumped over or "leapfrogged" in favor of bringing signals in from more distant originating stations. One rationale is that such a restriction would tend to prevent cable systems scattered about the country from gravitating in their use of signals toward distant "big city" stations. Since the most profitable stations are in the large cities, as noted previously, a rule against leapfrogging would have the merit (unlike the previous ones) of tending to protect the outlying weaker stations, rather than simply conferring blanket protection.

Nevertheless, the wisdom of such a rule is questionable. A cable operator might desire to leapfrog in bringing in a distant station that provides a desirable measure of diversity and programming and at the same time depends heavily on the carriage of its signal by distant cable systems for financial support (the situation of station Z, page 29). Yet, under a leapfrogging rule, the cable operator would be prohibited from doing so.

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It is true that originating stations do not undertake these network functions today (other than sometimes attempting to sell the distant audiences to their own advertisers, as noted previously). But this is only because cable systems are still small with very little penetration in the top 100 markets where more than 80 percent of the nation's population lives.
More generally, prohibiting leapfrogging would restrict competition among nearer and more distant stations in serving the needs of cable subscribers. For example, it is sometimes said that it would be unwise to permit signals of big city stations (such as those of the Los Angeles independents) to be microwaved over large portions of the country — and that only by prohibiting leapfrogging can that threat be abated. Yet the question arises as to why cable subscribers should be prevented from viewing the Los Angeles station if that is what they really want. After all, a cable operator is not going to bear the cost of microwaving a signal hundreds of miles if it fails to attract subscribers. Is it any more inimical to the public interest to permit the signals of the Los Angeles independent to be microwaved about than it is to permit the signals of a cable network to be microwaved about?

We return to the point made previously — an originating station can take on the functions of a regional or national cable network in the same way as a formally organized cable network. But neither can be fully successful unless it is permitted to leapfrog. It would be contradictory to favor the growth of interconnected regional and national cable networks and simultaneously to advocate restrictions on leapfrogging in the use of distant signals.

A second frequently voiced rationale against leapfrogging is that a greater community of interest exists with the nearer geographic areas, and that this community of interest should be maintained and promoted. In the words of one respondent before the FCC:

Generally speaking, a station located in the same state as a CATV [cable TV] system can be expected to provide news, public affairs, political and educational programming that would be of more interest to the CATV community than a station located in another state. Similarly, a station located in reasonable proximity to the CATV community can be expected to carry programming of more interest to the CATV community than would a different station.¹

Again, the question of subscriber welfare arises. Is he not in the best position to judge what he prefers and what he does not prefer?

If he prefers the more distant signal, originating perhaps in another state, to one in his own state, why deny him that choice? If a community of interest really exists with the nearer area served by the most proximate distant station, then presumably the viewer will prefer it and the cable will carry it and no formal restriction is needed. (A common error is to conclude that without restrictions cable will carry, helter-skelter, all kinds of signals without regard to the wishes of subscribers. So long as cable operators are interested in their own profits, this situation would hardly arise.)

Moreover, whatever constitutes a community of interest will change over time as a consequence of such factors as technological advances in transportation, growth of new markets, growth in regional and national income, and the very advances in communications of concern in this Memorandum. In this process, geographical proximity will play a progressively less important role. To impose a geographical concept on the cable industry would promote a pattern of growth less relevant through time as new communities of interest emerge and old ones die.

MORE PROMISING APPROACHES

Limitations on Exclusive Use of Programming

The threat to broadcasters arising from origination of popular programming by cable operators is a consequence partly of the exclusivity arrangements under which copyrighted material is sold. Under these arrangements, the buyer typically has the sole right to employ the material in his market for a period of time that could extend over years. Conditions of exclusivity are also a major factor that have made life difficult for non-network stations: the leading VHF stations in a given market frequently bid away the best programming under exclusivity arrangements such that weaker stations competing in the same market are able to obtain the programming only after years, if at all.

A restriction on allowable periods of exclusivity would strengthen the complementary effects of cable growth on broadcasting by facilitating the flow of programming among competitive users. Moreover, and
especially important, it would strengthen the positions of the weaker broadcasters (such as the independent UHF stations) against both cable systems and the strong broadcasters, rather than conferring blanket protection along the lines noted previously. The major potential drawback to limiting exclusives (a subject that requires further investigation) lies in the effect it would have on program production; for limitations would discourage production of programming of whatever sort is remunerative only under conditions of long exclusivities.

Compulsory Licenses to Broadcasters

Another possibility for strengthening the complementary effects, somewhat more complex than an across-the-board limitation on exclusivity, is what we might call the concessionary-fee compulsory license. To illustrate how this arrangement might work, let us suppose that a cable network or a distant originating station procures the rights to a major feature film. Suppose further that a cable system obtains this film either through carriage of the broadcasting distant signal or as an affiliate of the cable network. Any broadcasting station within whose A contour (or perhaps the B contour)\(^1\) a cable system shows this film has the right of using the film with payment of a relatively small fee after a specified time span (perhaps six months or a year) from the time of first showing by cable.\(^2\) If the cable system operates within the specified contour of more than one station, and two or more desire use of the film, then they would rotate in the exercise of their rights. For example, the system might offer films A, B, C, and D, during the week in a market in which stations 1, 2, and 3 operate. Station 1 would have the right to select A. If it exercises the right, then station

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\(^1\) The grade A contour of a broadcasting station is that within which satisfactory service can be expected at least 90 percent of the time for at least 70 percent of the receiving locations; grade B includes satisfactory service at least 90 percent of the time for at least 50 percent of the receiving locations in the contour. Thus, the grade B contour has a greater radius than grade A.

\(^2\) The local station might be permitted reruns of the films in whatever number the cable operator has negotiated for himself with the copyright holder.
2 has the right to B; if station 1 does not select A, then station 2 may select A. If station 2 does select A, then station 3 has the right to B, and so forth.

Broadcasters would obviously be benefited in being assured that under concessionary terms they would have access to the most appealing program that can be offered by cable; nothing could be permanently siphoned away from "free" television. This procedure would, of course, be at the expense of cable, because in negotiating for program rights the cable network would have to pay copyright owners a higher fee to cover the cable programming used by those local stations who choose to exercise their rights. At the same time, cable systems would continue to have some incentive to negotiate on this basis in that the built-in time delay would enable cable subscribers to have first exposure to the programming. The time delay would, of course, need to be adjusted for the type of programming -- for a major sports event, perhaps no more than 24 hours; for a feature film, perhaps 6 months to a year.

Thus, the arrangement would constitute a subsidy from cable to broadcasting. But it would have the advantage of benefiting most directly the non-network UHF stations -- for a network affiliate already has network programming available, and would be more reluctant to exercise the right to use the cable programming already being seen by the cable audience, particularly in prime time, than would the non-affiliate.

Since a compulsory license system would cover programming brought into a market either through cable origination or through carriage of distant signals, it could impose a severe burden on cable, depending in part on the level of fee set for use by local broadcasting stations.1 Introduced in the near future, such a system might seriously impede the growth of cable in its present early stage of development. However,

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1 It would be important to apply the compulsory license to the programming on distant signals, as well as to cable originations, since otherwise cable operators could dodge the requirement by arranging with a selected few distant broadcasting stations to originate programs that otherwise would have been originated on cable.
it is described here not for near term application but as a possible tool in the longer run if, in the meantime, cable systems grow to encompass most of the homes in metropolitan areas; if service to non-subscribers is seriously jeopardized, especially in rural areas; if other ways of stimulating complementarities between cable and broadcasting (such as limitations on exclusivity as outlined above) are inadequate; and if, at that time, additional protection for broadcasting is judged to be socially beneficial.

**Limited Use of Anti-Siphoning Rules**

In a recent ruling on over-the-air pay television, the FCC has adopted a set of rules designed to prevent the siphoning of the kinds of programming now shown on free television. These rules include provisions that (a) no commercial advertising may be carried, (b) feature films shall not be broadcast that have had general release in theatres anywhere in the United States more than two years prior to their subscription broadcast, (c) sports events shall not be broadcast that have been televised live on a non-subscription, regular basis in the community during the two years preceding their proposed subscription broadcast, (d) no series type of program with interconnected plot or substantially the same cast of principal characters shall be broadcast, and (e) not more than 90 percent of the total subscription programming hour shall consist of feature films and sports events combined.¹

Were such rules carried over to cable operations, they would have the undesirable effects of giving blanket protection of the sort discussed earlier, rather than being directed to helping broadcasting stations most threatened. More desirable approaches are those under which cable operators would not be prohibited from undertaking certain kinds of programming, but under which they would be required to make the programming available to broadcasters under special terms.

Nevertheless, the anti-siphoning rules (or variants) adopted by the FCC with respect to pay television might serve a useful purpose if

¹FCC, Fourth Order and Report, Docket 11279, 1968, Appendix D, pp. 4-5.
applied to the specialized extra pay channels. As mentioned in Section III, in addition to offering a basic service for some flat monthly fee, cable operators may offer special channels at an additional fee as a straightforward application of pay television by wire. Were the anti-siphoning rules applied to these channels, the cable operator would then be left with a choice: he could offer anything he wants over the basic channels, but subject to limitations on exclusivity or possibly to the compulsory license to local stations; or he could originate over the special additional pay channels and suffer some restriction in program content.¹

THE POSITION OF NON-COMMERCIAL STATIONS

We noted in Section II that payments by cable operators to non-commercial stations, analogous to payments for copyrighted materials offered by commercial stations, might provide a substantial basis of financial support for non-commercial operations. But it is important to emphasize that the size of the financial contribution to any particular non-commercial station would depend on how widely its signal is carried on cable systems. Support would be channeled to the local educational non-commercial station to the extent that payment, if any, is required for local signals (see p. 34, footnote 1). But, consistent with the arguments presented earlier in this Memorandum, the cable operator would remain free to bring in distant non-commercial signals, as he would in the case of commercial signals, and the amount of his contribution to non-commercial service would depend on the number of distant non-commercial signals he carries. Thus, non-commercial stations whose signals are in strong demand would tend to gain on balance;

¹For cable systems that operate as full common carriers the distinction between basic service and specialized service is blurred or entirely erased, since originators on each channel would deal individually with subscribers. Here application of the anti-siphoning rules would be more questionable since they would provide blanket protection on all origination channels. Limitations on exclusivity, and possibly compulsory licenses, seem more appropriate in these cases.
those not so fortunate would lose. In short, competitive pressures on non-commercial as well as on commercial stations would increase.\footnote{This pressure will be all the more severe, because local non-commercial stations may face competition not only from non-commercial distant signals but from commercial ones as well -- especially if diversity of commercial programming widens as a consequence of the factors discussed previously in this Memorandum.}

Thus, we face the question of whether the local station whose signals are not in strong demand in distant markets should be protected from fragmentation of its local audience caused by the carriage of distant signals into its local market. This question is especially pressing since the protective devices discussed above -- limiting exclusivity arrangements, compulsory licenses, and use of anti-siphoning rules -- would bear little relevance in the case of non-commercial service.

However, rather than considering special protective devices for non-commercial television at this time, perhaps a wiser course of action is to let cable grow and evolve in order to determine more clearly whether the use of cable itself offers new opportunities to local non-commercial stations. One of the major attractive features of cable television is its ability to provide more educational and instructional programming than is possible with today's over-the-air broadcasting. It may turn out to be quite feasible to employ the existing originating equipment of local non-commercial stations and their skills, talents, and knowledge for these broader tasks. These new responsibilities and the additional financial support they would generate from educational institutions, governments, and other sources, might put local non-commercial stations on a firmer financial footing than is the case today, despite fragmentation of local audiences. Such possibilities will be examined in greater detail in subsequent Rand studies.
V. CONCLUDING REMARKS

We know that cable television has bright prospects for offering a broader range of informational, instructional, educational, and entertainment programming than today characterizes the television medium. But we do not know how far the cable industry will develop to convert these prospects into reality, even if it were permitted to grow without restraint. Perhaps tens of millions of viewers would be willing to pay subscription fees, perhaps not. Perhaps cable systems are destined to operate largely as extended antennas, as they are now operating, or perhaps they will evolve into full-blown common carrier systems with many new uses in addition to conventional television.

We also know that growth of cable can threaten over-the-air broadcasting in a manner contrary to the interests of non-subscribers. But the degree to which particular levels of cable growth would in fact actually threaten broadcasting is a matter of conjecture. Experience with cable is simply too limited to provide a sure quantitative basis for predicting future growth and impact.

Within this environment of uncertainty, we nevertheless face the problem of devising sound policy relating to conditions under which cable television should be permitted to grow and to evolve to take advantage of whatever opportunities do emerge. The preceding analysis suggests a permissive policy insofar as cable operators should be free (a) to carry distant signals without a particular predetermined limit, (b) to leapfrog in use of distant signals, (c) to interconnect into networks, (d) to originate local and non-local programming, and (e) to sell advertising, at least during local live (or delayed playback) originations.

However, cable operators should be expected to pay for distant signals for the same reasons that they pay for programming obtained in other ways, and for the same reasons that other users of programming are generally expected to pay. (The case of local signals is less clear.) Use of distant broadcast signals, cable network interconnection, and originations by cable operator using film or video tape are simply
three alternative techniques for feeding programming into cable. Whether the operator chooses to obtain a film in order to originate directly, or whether he chooses to pick up a distant signal that carries the same film, should depend on which alternative is mechanically the less costly. His choice should not hinge on the fact that, as a consequence largely of historical accident, he is able to obtain the material free or on concessionary terms when it is obtained through one technique, but must pay full copyright when it is obtained through the other. Nor should his choice rest on an artificial distinction made by the FCC between alternative techniques, such that he is allowed to use one but prohibited or discouraged from using the other.

Control by the cable operator over the flow of information into the home is potentially a serious problem. Limiting his originations to a percentage of total programming is one promising way to alleviate the problem. Encouraging or requiring the use of common carrier channels is another. Indeed, in the longer term, it may turn out to be feasible and highly desirable to operate cable systems on a full common carrier basis.

With respect to broadcasting, we have some basis for optimism. The fact that radio has continued to develop despite the emergence of television suggests the existence of factors that would also tend to blunt the adverse effect of cable growth. The Canadian experience suggests that profits and revenues of broadcasters may not be seriously affected even if cable penetration rises to a level substantially above that yet encountered in the United States. Moreover, and most important, the growth of cable may tend to reduce the costs of broadcasting because of the complementary effects that will operate in addition to the competitive ones.

Nevertheless, if the threat does become serious at some point in the future, and if protection is deemed to be justified at that time, several possibilities come to mind. One promising approach is an across-the-board limitation on the periods of exclusivity accorded to buyers of programming. If this approach turns out to be infeasible or is judged inadequate, the stronger measure of a compulsory license
system to broadcasters might be the next best possibility. In addition, the use of the FCC's already established anti-siphoning rules for pay television may be practical so long as they are not used as a blanket protective device covering all or most cable origination channels.

In general, whatever protection is accorded should be tailored to help the most vulnerable stations. Protection should not be designed simply to maintain the existing level and structure of broadcasting profits.

Finally, we must bear in mind the implications of the preceding discussion for the home television viewer. It is reasonable to expect that he would continue to enjoy much in the way of free mass entertainment programs as he does now; that is, we would expect advertisers to continue supporting the full cost in cases where free access by viewers would expand audiences to attractively high levels. At the same time, the cable subscriber would have options, with additional fees, of seeing programming such as first-run movies and sports events blanked out on over-the-air broadcasting in his local area, as well as special kinds of educational and instructional programming appealing to very small audiences otherwise entirely unavailable over television. Third, the cable subscriber would have greater opportunity to view particular programs at times most convenient to himself: with many available channels over cable, the cultural public affairs programs typically seen on Sunday afternoon could also be carried during prime time, and the major documentaries could be available not once but many times during the week. In short, television would evolve into a medium with a range of public choice more closely resembling that to which we are accustomed in the book and magazine industries.

Although much of the analysis here is necessarily speculative, it does provide some basis of confidence that cable television can be permitted to grow rather freely, and that tools will be at hand, if they are needed, to protect the public interest in commercial and non-commercial broadcasting.