

THE IMPACT OF UHF PROMOTION: THE ALL-CHANNEL TELEVISION RECEIVER LAW

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INTRODUCTION

The All-Channel Television Receiver Law¹ was passed by Congress in the spring of 1962 at the request of the Federal Communications Commission and was signed into law by President Kennedy on July 10, 1962. This law gave the Federal Communications Commission the authority to require that all television receivers sold to the public should be capable of receiving all frequencies allocated for television use.² On November 21, 1962, using the authority given it by this law, the Federal Communications Commission ruled that after April 30, 1964, "all TV receivers shipped in interstate commerce [must] be able to adequately receive UHF as well as VHF channels."³ As a consequence, the All-Channel Television Receiver Law required that after April 1964 all new television receivers would be all-channel receivers, and it made illegal the sale of new television receivers capable of receiving only very-high frequencies. Although this law has been in existence for eight years, almost no one has questioned the basic assumption that this law was "in the public interest."

The purposes or goals of this law may be inferred by studying the hearings⁴ and the reports⁵ of the Congressional committees which held hearings on the law. There appear to have been several separate but related reasons given for the passage of the law. The law was expected to increase the number of new ultra-high frequency commercial and noncommercial television stations going on the air. The law could also be described as a piece of special-interest legislation whose purpose was to help existing ultra-high frequency stations which were making relatively small profits or outright losses. In addition, the law was expected to increase the number and diversity of program choices, and to make noncommercial (educational)

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¹ 47 U.S.C. § 303(s) (1964).

² *Id.*

³ FCC Public Notice 28141 (Nov. 21, 1962).

⁴ *Hearings on All Channel Television Receivers and Deintermixture Before the House Comm. on Interstate and Foreign Commerce*, 87th Cong., 2d Sess. (1962) [hereinafter cited as *1962 House Hearings*]; *Hearings on All-Channel Television Receivers Before the Subcomm. on Communications of the Senate Comm. on Commerce*, 87th Cong., 2d Sess. (1962) [hereinafter cited as *1962 Senate Hearings*].

⁵ HOUSE COMM. ON INTERSTATE AND FOREIGN COMMERCE, *ALL-CHANNEL TELEVISION RECEIVERS*, H.R. REP. NO. 1559, 87 Cong., 2d Sess. (1962); SENATE COMM. ON COMMERCE, *ALL-CHANNEL TELEVISION RECEIVERS*, S. REP. NO. 1526, 87th Cong., 2d Sess. (1962).

television programs available to more viewers, thereby increasing the number of persons who watched those programs. Finally, the law was supposed to encourage the development of more programs specifically designed for local markets, such as local news, political, religious, and sports programs.

Clearly, the goals or purposes of the law are all highly interrelated; nevertheless, they need to be considered separately because the law did not have an equal impact with respect to all of these goals. For example, it is possible that the law might have had a large effect with respect to those goals involving subsidization of UHF television stations without having any significant effect on those goals involving an increase in the quantity and diversity of television programs available to viewers.

I

HISTORY OF ULTRA-HIGH FREQUENCY TELEVISION

A. Early History

In order to understand the All-Channel Television Receiver Law (All-Channel Law), it is necessary to review the history of ultra-high frequency television. The Communications Act of 1934⁶ established the Federal Communications Commission (FCC) to replace the Federal Radio Commission.⁷

The Act of 1934 gave the FCC the authority to issue licenses to all nonmilitary broadcasting stations in the United States, thereby prohibiting any station from operating without a license. The FCC was also given the authority to assign to stations particular locations, frequencies, and call letters. It could specify their output power, antenna height, and hours of operation.⁸

Commercial television regulation actually began with the issuance of the first commercial television station license by the FCC in 1941.⁹ At first, television stations simply applied to the FCC for a license to operate in whatever community and on whatever channel they chose. In 1945, however, the FCC issued its first television allocation table, which determined a priori how many channels and which ones would be available in each city. A total of 405 assignments were made in the 140 largest metropolitan population centers, with seven each in New York, Chicago, and Los Angeles. This assignment plan was based on thirteen channels, for at that time the FCC had made only very-high frequency Channels 1 to 13 available for television.¹⁰

⁶ 47 U.S.C. § 151 (1964).

⁷ See generally W. EMERY, BROADCASTING AND GOVERNMENT: RESPONSIBILITIES AND REGULATIONS 19-24 (1961); J.M. EDELMAN, THE LICENSING OF RADIO SERVICES IN THE UNITED STATES, 1927 TO 1947: A STUDY IN ADMINISTRATIVE FORMULATION OF POLICY 5-7 (1950).

⁸ 47 U.S.C. §§ 303(c), (d), (e), (o) (1964). See also EMERY, *supra* note 7, at 32-33.

⁹ AD HOC ADVISORY COMM. ON ALLOCATIONS OF THE SENATE COMM. ON COMMERCE, 85TH CONG., 2D SESS., REPORT ON ALLOCATION OF TV CHANNELS 19 (Comm. Print 1958) [hereinafter cited as ALLOCATION OF TV CHANNELS].

¹⁰ *Id.* at 19.

The decision of the FCC to issue an allocation plan was to have a profound effect on the future development of the television industry. The FCC had decided to replace free market choice by regulatory control over entry in the television industry. Instead of merely issuing licenses for stations in cities where there was a definite demand for stations (as evidenced by the willingness of businessmen to spend the money necessary to build the stations), the FCC decided to determine in advance where stations could be built, thus limiting businessmen to building stations in the cities that the FCC had chosen.¹¹

In 1948 the FCC planned to extend its earlier allocation plan by making allocations available in a total of 340 cities. In the meantime it had assigned Channel 1 to fixed and mobile radio services, so that only twelve channels were available for television use.¹² It became apparent, however, that there were significant problems of interference between television stations which were operating in different places but on the same or adjacent frequencies. As a result, on September 30, 1948, the FCC announced a "freeze" policy,¹³ which meant that no new permits to construct television stations would be issued until after the question of interference and minimum spacing between stations had been studied. The thirty-seven stations already on the air were allowed to continue broadcasting, and the eighty-six stations which had already been issued construction permits were allowed to go ahead with their plans to construct stations and go on the air.¹⁴

Originally the FCC had expected the freeze to last only a few months. Contemporaneously, however, it also became involved in the question of what kind of color television system the industry should have in the future.¹⁵ Because the FCC held protracted hearings on color television and television interference problems, three and one-half years passed before it lifted the freeze. Finally, on April 14, 1952, the FCC issued its Sixth Report and Order which ended the freeze on applications for construction permits.¹⁶

At the time the Sixth Report and Order was issued, there were 108 commercial very-high frequency stations on the air.¹⁷ It is certain there would have been considerably more stations on the air by 1952 if the FCC had not limited entry between 1948 and 1952.

¹¹ Although it was still possible for a station to get a license to operate in a city which did not originally have an unused channel, this could only be accomplished through a change in the table of allocations. Because such changes require administrative hearings, they are rarely made. *See id.* at 19.

¹² EMERY, *supra* note 7, at 114.

¹³ Amendment of Section 1.371 of the Commission's Rules and Regulations, Nos. 8736 & 8975, 13 Fed. Reg. 5860 (F.C.C., released Sept. 30, 1948).

¹⁴ ALLOCATION OF TV CHANNELS, *supra* note 9, at 19-21.

¹⁵ *Id.* at 20.

¹⁶ Amendment of Section 3.606 of the Commission's Rules and Regulations; Amendment of the Commission's Rules, Regulations and Engineering Standards Concerning the Television Broadcast Service; Utilization of Frequencies in the Band 470 to 890 Mcs for Television Broadcasting (Sixth Report and Order), Nos. 8736, 8795, 9175, & 8796, 17 Fed. Reg. 3905 (F.C.C., filed May 1, 1952) [hereinafter cited as Sixth Report and Order].

¹⁷ ALLOCATION OF TV CHANNELS, *supra* note 9, at 21.

B. The Sixth Report and Order

The Sixth Report and Order provided a new allocation plan which made a total of eighty-two channels available, of which twelve were the old very-high-frequency (VHF) channels 2-13, and seventy were on the new ultra-high-frequency (UHF) television band as channels 14-83.¹⁸ Table 1 shows the over-all allocation plan of the Sixth Report and Order. Significantly, over two-thirds of the commercial station allocations were made on UHF channels. Furthermore, the FCC added a new class of noncommercial stations, often called "educational," whose chief difference from commercial stations was that they were not permitted to have any commercial advertising. Over two-thirds of the noncommercial station assignments were also made on UHF channels. Thus, for a total of 2,002 station allocations, 1,433, or about 71.6 per cent of all allocations, were made on the UHF band. It is clear, therefore, that the FCC expected most of the future growth of the television industry to be on the UHF band.

TABLE 1
TELEVISION ALLOCATIONS IN THE FCC'S SIXTH REPORT AND ORDER OF APRIL 14, 1952

	Number of UHF Stations	Number of VHF Stations	Total Number of Stations
Commercial Stations.....	1,271	498	1,769
Educational Stations.....	162	71	233
Total Stations.....	1,433	569	2,002

Source: AD HOC ADVISORY COMM. ON ALLOCATIONS OF THE SENATE COMM. ON COMMERCE, 85TH CONG., 2D SESS., REPORT ON ALLOCATION OF TV CHANNELS 21 (COMM. PRINT 1958).

The allocation plan of the Sixth Report and Order was based on certain listed priorities:

Priority No. 1: To provide at least one television service to all parts of the United States.

Priority No. 2: To provide each community with at least one television broadcast station.

Priority No. 3: To provide a choice of at least two television services to all parts of the United States.

Priority No. 4: To provide each community with at least two television broadcast stations.

¹⁸ The continuous television channel numbers do not correspond to a continuous band of radio frequencies. In fact, the television band is actually divided into four parts:

<i>Band</i>	<i>Channels</i>	<i>Frequency Range (megahertz)</i>
VHF	2-4	54-72
VHF	5-6	76-88
VHF	7-13	174-216
UHF	14-83	470-890

As this division illustrates, the entire FM radio band (88 to 108 megahertz) lies between television channels 6 and 7.

Priority No. 5: Any channels which remain unassigned under the foregoing priorities will be assigned to the various communities depending on the size of the population of each community, the geographical location of such community, and the number of television services available to such community from television stations located in other communities.¹⁹

In addition, it was explained in the Sixth Report and Order that, in general, one or two station allocations were made in cities with a 1950 central city population of under 50,000; two to four in cities of 50,000 to 250,000; four to six in cities of 250,000 to 1 million; and six to ten in cities of over 1 million.²⁰

The five priorities listed above conflict with each other. The first and third priorities refer to bringing television programs to as many parts of the United States as possible. The second and fourth priorities envision having television stations in as many communities as possible. Policies which enable persons to have available a large number of program choices (such as encouraging the development of community antenna television systems, for example) may decrease the growth in the number of stations in each community; whereas policies which encourage the growth in the number of stations in each community (such as restricting the growth of community antenna television and subscription television) may decrease the number of program choices available to viewers. This will be discussed in Section IV below.

Because of the importance of the allocation plan used in the Sixth Report and Order on future FCC actions, it is worth quoting extensively the FCC's rationale for this method of allocation:

A Table of Assignments makes for the most efficient technical use of the relatively limited number of channels available for the television service. It protects the interests of the public residing in smaller cities and rural areas more adequately than any other system for distribution of service and affords the most effective mechanism for providing for noncommercial educational television. It permits the elimination of certain procedural disadvantages in connection with the processing of applications which would otherwise unduly delay the overall availability of television to the people. . . .

. . . It is clear that, mathematically, once a fixed station separation has been agreed upon, the maximum number of stations which can be accommodated on any given channel becomes fixed. . . . [A]n Assignment Table drawn upon an examination of the country as a whole can confidently be expected to more closely approximate the mathematical optimum, than would assignments of stations based upon the fortuitous determinations of individual applicants interested solely in the coverage possibilities in a particular community irrespective of the effect of such assignments on the possibility of making assignments in other communities. . . .

. . . [W]hile the record in this proceeding demonstrates that the desire for broadcasting service from local stations, reflecting local needs and interests is

¹⁹ Sixth Report and Order, *supra* note 16, para. 63.

²⁰ *Id.* para. 68.

widespread, experience has shown that many of the communities which cannot now support television stations but would eventually be able to do so, will in the absence of a fixed reservation of channels for their use, find that available frequencies have been preempted. . . .

. . . [I]n the absence of a fixed Assignment Table it would be unduly complex—and perhaps impossible—to decide all conflicting demands among communities in individual licensing proceedings. Once it is recognized that these conflicting demands are interrelated, it becomes apparent that they can most satisfactorily be decided in one hearing. . . .

. . . It is contended that the establishment of a Table of Assignments . . . does not provide sufficient flexibility in the assignment of channels as to enable us to recognize economic, geographic, population and other pertinent differences between communities and areas. . . . But it has not been in any wise demonstrated by anyone making this contention that the end result of the claimed “flexibility” for the “application” or “demand” method of assigning television channels throughout the country will be a more fair, or more equitable, or a more efficient assignment of television facilities throughout the country. Indeed, it is almost self evident that assignments made upon the “application” or “demand” method necessarily leads to results which do not adequately reflect *on a nation-wide basis* significant comparative needs as well as differences among communities throughout the country.²¹

This explanation of the need for a predetermined allocation table is interesting primarily because of the large number of logical errors and hidden value judgments it contains. For one thing, in 1970, eighteen years after this statement of policy, it is not obvious that using up all the channels assigned to television will be a problem any time in the near future. There are, however, specific cities where additional stations might go on the air, if only the FCC would make additional channels available. It is also not obvious that a fixed system of allocations does protect the interests of the public residing in small cities and rural areas. In fact, the allocation plan may only reserve allocations for cities which never will use them. Community antenna television systems, which could bring in additional programs, protect the interest of the public in rural areas far better than any number of idle channel assignments.

While it might be true that allocating all channels in advance would lead to a mathematical optimum in the sense that it leads to the maximum number of possible channel assignments once a fixed separation distance between stations is decided upon, such an optimum is irrelevant. As a first approximation, what matters is the number of assignments which are being used, since unused channels do not provide any economic or social welfare. In other words, what matters is economic efficiency. Apparently, minimum station separations are set on the basis of having a maximum tolerable amount of interference between stations.²² In fact, considerations of economic efficiency suggest that under certain circumstances, high levels of

²¹ *Id.* paras. 13-17 (emphasis added).

²² *Id.* paras. 103-42.

interference may be "efficient," since they would allow more stations to broadcast on the same frequency. A determination of maximum interference should be based on a comparison of the costs and benefits of various levels of interference. Attempting to provide interference-free reception for all receiver locations may be far too costly a goal.²³

Although it is true that without reservations for future use, some communities may never get television stations, it is equally true that some will never use those allocations reserved for them. Perhaps this only implies that larger communities can provide profitable markets for stations which small communities can never provide. If that assumption is correct, large communities should not be prevented from having more stations. Such a reservation of channels for small unprofitable communities means that resources are taken from more productive uses and forced into less productive or nonproductive uses, representing economic inefficiency, not efficiency.

It may be true that without a fixed system of allocations and without a market system of allocating channels, conflicting demands could make licensing proceedings long, complicated, unfair, and expensive. In fact, any system of awarding licenses by administrative decision rather than relying on the price mechanism is unlikely ever to be a simple, fast, and efficient method of allocating resources.

Whether the use of a "demand" method of allocating channels would be "fair" or "equitable" is a question which is impossible to answer here, since it depends upon one's personal definition of those terms. It seems evident, nevertheless, that it would lead to a more efficient allocation of channels than a system which prevents persons from obtaining station licenses in towns or cities where those channels would be productive and the stations using them would be profitable. Finally, a system which allocates channels primarily on the basis of population does not consider comparative needs, wants, or differences among communities which are expressed by any economic or social variables other than population.

Thus, it is not at all clear that the use of a predetermined allocation table is a desirable method of controlling the television industry. Nevertheless, that is the basis not only of the 1952 allocation plan but also of the continuing actions by the FCC today with respect to UHF stations.

C. UHF Television From 1952 to 1962

In making the 1952 allocation plan, the FCC evidently assumed that UHF stations could be as profitable or nearly as profitable as VHF stations. The Commissioners apparently believed that, over time, UHF would grow as rapidly as

²³ For a more complete discussion of the problems inherent in the present system of allocations, see Note, *The Crisis in Electromagnetic Frequency Spectrum Allocation: Abatement Through Market Distribution*, 53 IOWA L. REV. 437 (1967); Levin, *Federal Control of Entry in the Broadcast Industry*, 5 J. LAW & ECON. 49 (1962); Levin, *Regulatory Efficiency, Reform and the FCC*, 50 GEO. L.J. 1 (1961); Coase, *The Federal Communications Commission*, 2 J. LAW & ECON. 1 (1959), as well as Johnson, *Towers of Babel: The Chaos in Radio Spectrum Management*, in this symposium, p. 505.

VHF. Throughout the period from 1952 to 1962, however, it became increasingly evident that UHF stations were not multiplying at the same rate as VHF stations. During that period there was fairly steady growth among VHF stations, while the number of UHF stations actually declined from 1954 to 1960. Because they were unprofitable, many UHF stations which went on the air went off again within a short period. The majority of those which stayed on the air continued to lose money. This was true even while VHF stations were earning a high rate of return. In addition, very little demand developed for educational assignments, especially those on UHF channels.

Repeated congressional hearings were held on the questions of why more UHF stations did not come on the air and why so many of them which went on the air lost money and went off again.²⁴ The explanation which was accepted in those hearings was that the vast majority of television sets in American homes were not capable of receiving UHF signals. As a result, commercial UHF stations had significantly smaller audiences than commercial VHF stations. Commercial stations receive most of their income from advertising, and advertising rates and the amount of advertising purchased depend on the size of the viewing audience. Therefore, UHF stations with small audiences received little revenue, while VHF stations received much revenue. Consequently, many UHF stations went bankrupt and shut down, while VHF stations continued to be highly profitable.²⁵

Since there were so few commercial UHF stations on the air by 1962, few people were willing either to pay the additional expense to buy all-channel television sets instead of VHF sets or to buy UHF converters for their VHF sets. As a consequence, new UHF stations did not enter the market because UHF audience size and profits remained low. That, in turn, reinforced the continued lack of interest in UHF programs by viewers.²⁶

In addition, since the VHF stations usually had the largest audiences, networks preferred to affiliate in any given market with VHF stations rather than UHF stations. Since the majority of the most popular television programs were produced

²⁴ See generally Levin, *Economic Structure and the Regulation of Television*, 72 Q.J. ECON. 430 (1958). See also *Hearings on the Status of UHF and Multiple Ownership of TV Stations Before the Subcomm. on Communications of the Senate Comm. on Interstate and Foreign Commerce*, 83d Cong., 2d Sess. (1954); R. JONES, SPECIAL COUNSEL FOR THE SENATE COMM. ON INTERSTATE AND FOREIGN COMMERCE, 84TH CONG., 1ST SESS., REPORT ON INVESTIGATION OF TELEVISION NETWORKS AND UHF-VHF PROBLEM (Comm. Print 1955); H. PLOTKIN, SPECIAL COUNSEL FOR THE SENATE COMM. ON INTERSTATE AND FOREIGN COMMERCE, 84TH CONG., 1ST SESS., REPORT ON TELEVISION NETWORK REGULATION AND THE UHF PROBLEM (Comm. Print 1955); *Hearings on the Television Inquiry Before the Senate Comm. on Interstate and Foreign Commerce*, pt. 1, *UHF-VHF Allocation Problem—Testimony of FCC*, 84th Cong., 2d Sess. (1956); *id.* pt. 2, *UHF-VHF Allocations Problem—Testimony of Public and Industry Witnesses*, 84th Cong., 2d Sess. (1956); *id.* pt. 5, *Allocations—Testimony of the FCC, Additional Supplement on Network Practices*, 85th Cong., 1st Sess. (1957); *id.* pt. 6, *Review of Allocations Problems—Special Problems of TV Service to Small Communities*, 85th Cong., 2d Sess. (1958); *id.* pt. 8, *Television Allocations*, 86th Cong., 2d Sess. (1960); ALLOCATION OF TV CHANNELS, *supra* note 9; 1962 Senate Hearings, *supra* note 4; 1962 House Hearings, *supra* note 4.

²⁵ H.R. REP. No. 1559, *supra* note 5, at 2-4.

²⁶ 1962 Senate Hearings, *supra* note 4, at 63-65.

by the networks, stations which received affiliation contracts normally obtained increasing audiences and profits. The nonnetwork UHF stations, therefore, continued to suffer from small audiences and revenues because they broadcasted less popular programs.

In spite of the fact that few people owned UHF receivers, the FCC in its 1952 allocation plan made most of its educational assignments on the UHF band. As a consequence, the potential audience for educational programs was quite small, and less public interest developed in educational television than its promoters and the FCC had expected.²⁷

In addition, a number of the FCC priorities suggested in the Sixth Report and Order were not being adequately carried out. Many communities had no television stations, much less two or more; many were not capable of receiving even two television signals, whether locally or distantly originated; and many more could not receive all three national networks. Relatively little local programming was available.

These were the problems of the television industry which were seen by Congress and the FCC. Evidently they felt that an unregulated television industry had not dealt with these problems adequately in the past and would be unable to deal with them in the future. Because they believed that something had to be done, the All-Channel Law was enacted.

However, before the All-Channel Law was finally passed, a number of alternative methods of helping or subsidizing UHF television were considered. One of these was "selective deintermixture."²⁸ *Intermixture*, in FCC language, meant the assigning of both UHF and VHF channels to the same location. Therefore, *deintermixture* meant that channels would be reallocated in such a way that some cities would have all UHF channels and others would have all VHF channels. This would force viewers in cities with only UHF stations to buy UHF receivers, since they would have the choice of watching UHF programs or no programs at all. It was hoped that this would increase the audience size of those UHF stations and eventually make them more profitable.

At the time of the All-Channel Hearings, the FCC was in the process of testing selective deintermixture in a number of communities despite vigorous protests by viewers and station owners in the communities concerned. In the Congressional hearings it became quite evident that the senators and representatives from these areas were opposed to the continuation of this policy because their constituents opposed it. VHF station owners were opposed to this plan because of the expense of buying new transmitters and antennas and scrapping the old equipment if they were forced to change from VHF to UHF. Viewers were opposed to this

²⁷ *Id.* at 114-18.

²⁸ For a more complete discussion of the deintermixture proceedings, see Note, *The Darkened Channels: UHF Television and the FCC*, 75 HARV. L. REV. 1578, 1583-91 (1962). See also *Current Problems—Television Service and the FCC*, 46 TEXAS L. REV. 1100, 1120-21 (1968).

change not only because of the cost of buying UHF converters and antennas for their VHF sets, but also because they feared that some stations might go off the air, and that those UHF stations which remained on the air would not provide signals as powerful and sharp as those of VHF stations.²⁹ In any case, the FCC agreed to stop these tests temporarily following the passage of the All-Channel Law.³⁰

A second plan, advocated by FCC Commissioner Robert E. Lee, would have changed *all* television stations from VHF to UHF.³¹ Presumably this would have placed all stations at an equal competitive disadvantage since all VHF stations would have had to buy new equipment, and all would have started with equally small audiences. However, because of the capital costs of changing all television stations from VHF to UHF, this plan never received very serious Congressional consideration. Instead, Congress passed the All-Channel Law, never considering the possibility that it might have been in the public interest not to help UHF stations at all.

II

THE EFFECTS OF THE LAW

In the hearings on the All-Channel Law, the chairman of the FCC described some specific goals of that law:

[T]he Commission has come to the basic conviction that the public interest entails a television system which will serve all the people, encourage local outlets, foster competition—particularly in the larger markets—and meet educational needs.

Specifically, this means a television system which will:

- (1) Be truly competitive on a national scale by making provision for at least four commercial stations in all large centers of population.
- (2) Provide at least three competitive facilities in all middle-sized communities.
- (3) Permit all communities of appreciable size to have at least one television station as an outlet for local self-expression.
- (4) Provide noncommercial educational service throughout the country.³²

Basically, these goals appear to be an extension of the priorities of the Sixth Report and Order which were described above.³³ It was stated above that these and the other implied goals of the All-Channel Law might be more generally described as including several separate goals. These goals were to increase each of the following:

- (1) the number of new UHF commercial stations going on the air each year;
- (2) the number of new UHF educational stations going on the air each year;
- (3) the audience size, revenue, and profits of existing commercial UHF stations;

²⁹ 1962 House Hearings, *supra* note 4, at 11-118, 134-98.

³⁰ *Id.* at 195-98.

³¹ *Id.* at 199-207.

³² 1962 Senate Hearings, *supra* note 4, at 31-32 (statement of Newton Minow).

³³ See text accompanying note 19 *supra*.

- (4) the number and the diversity of commercial program choices available to viewers throughout the United States;
- (5) the number and quality of educational programs available to viewers; and
- (6) the number of communities which had local stations, which would provide more programming of a specifically local nature.

First of all, we wish to consider to what extent the All-Channel Law has accomplished these goals in the past eight years. Because it may be too soon after the passage of that law to judge its long-term effects completely, it will be necessary to speculate about the future effects of the law.

A. Growth of UHF Commercial Stations

The law has had a significant effect on the number of homes with UHF television sets. The number of television homes with at least one UHF set rose from 7.1 percent in 1962 to 7.3 in 1963, 9.6 in 1964, 15.8 in 1965, 27.6 in 1966, 42.1 in 1967, and 54.9 per cent in 1969.³⁴ Although UHF penetration has been rising rapidly, one could more accurately estimate the effect of the law after UHF penetration approaches one hundred per cent.

Nevertheless, it seems apparent that the law has already had some impact on the growth of commercial UHF stations. Table 2 shows that from 1954 to 1960 the number of UHF stations on the air declined. The All-Channel Law was passed in 1962 and took effect in April 1964. Since 1964 there has been a substantial growth in the number of stations on the air. Between 1964 and 1970 the number of commercial UHF stations has more than doubled from eighty-eight to 182. In addition, the growth rate of UHF stations has been generally rising. The number of commercial UHF stations increased by 12.5 per cent from 1965 to 1966, by 19.2 per cent from 1966 to 1967, by 15.3 per cent from 1967 to 1968, by 23.5 per cent from 1968 to 1969, and by 8.3 per cent from 1969 to 1970.

The high rate of growth of UHF stations may be compared with the small increase in commercial VHF stations in the same period. From 1964 to 1970, the number of commercial VHF stations only increased from 467 to 508. In addition, the yearly rate of growth of VHF stations varied between 0.4 and 2.1 per cent. While this indicates that UHF is now growing far faster than VHF, it is not clear how much of the difference is due to the All-Channel Law and how much is due to the increasing scarcity of VHF assignments compared to UHF assignments, which will be discussed later.

B. Growth of UHF Educational Stations

It is difficult to observe any effects of the All-Channel Law on the growth of educational UHF stations. Educational UHF stations have been growing at faster rates than educational VHF stations since 1959, five years before the All-Channel Law

³⁴NATIONAL ASSOCIATION OF BROADCASTERS, 1968-69 DIMENSIONS OF TELEVISION 10.

TABLE 2
NUMBER OF TELEVISION STATIONS ON THE AIR, 1946-70

Year*	Commercial Stations		Educational Stations	
	UHF	VHF	UHF	VHF
1946.....	—	6	—	—
1947.....	—	12	—	—
1948.....	—	16	—	—
1949.....	—	51	—	—
1950.....	—	98	—	—
1951.....	—	107	—	—
1952.....	—	108	—	—
1953.....	6	120	—	—
1954.....	121	233	1	1
1955.....	114	297	3	8
1956.....	97	344	5	13
1957.....	90	381	6	17
1958.....	84	411	6	22
1959.....	77	433	7	28
1960.....	75	440	10	34
1961.....	76	451	15	37
1962.....	83	458	19	43
1963.....	91	466	22	46
1964.....	88	476	32	53
1965.....	88	481	41	58
1966.....	99	486	49	65
1967.....	118	492	56	71
1968.....	136	499	75	75
1969.....	168	506	97	75
1970.....	182	508	105	77

*Data are for January 1 or January 2 of each year.

Source: 38 TELEVISION FACTBOOK 57-a (1963); BROADCASTING, Jan. 6, 1969, at 72; BROADCASTING, Jan. 20, 1970, at 90.

took effect. Although the absolute yearly growth of UHF stations has been rising, there is no clear-cut upward trend in the rate of growth since the passage of the law. On the other hand, the growth rate of educational VHF stations is definitely decreasing. From 1964 to 1970, educational UHF stations increased from thirty-two to 105, while the number of educational VHF stations only increased from fifty-three to seventy-seven. Again, however, it is not clear whether this indicates the effectiveness of the All-Channel Law, or merely the declining availability of VHF channels.

The lack of VHF channels seems quite significant considering that the FCC issued a new and substantially altered allocation plan in 1966.⁸⁵ (See Table 3.) As a result of this allocation, there are very few available VHF channels. Although the plan made available 551 commercial VHF assignments, 508 of them were in use by January 1970, and of the 107 VHF educational channels allocated, seventy-seven were in use by 1970. This means that there are only seventy-three unused VHF channels

⁸⁵ The plan originally was released in 1965. *Fostering the Expanded Use of UHF Television* (Fourth Report and Order), 5 P & F RADIO REG. 2d 1587 (1965) [hereinafter cited as UHF Television Use]. Because of a computer error discovered after the plan was issued, it was modified and reissued in 1966. *Id.* (Fifth Report and Memorandum Opinion and Order), 2 F.C.C.2d 527 (1966).

available.³⁶ In contrast, the 1966 plan made available 590 commercial assignments on UHF, of which only 182 were in use by 1970, and 508 UHF educational assignments, of which only 105 were in use by 1970. These figures indicate that most of the future growth of television stations must be on the UHF band. They also suggest that the rising growth of UHF stations may be at least as much a result of the decreasing availability of VHF channels resulting from the FCC's allocation plan as it is a result of the All-Channel Law. In other words, it is becoming more and more evident that potential station owners have a choice of using a UHF channel or not building a station.

TABLE 3
1966 FCC TELEVISION ALLOCATION PLAN

	Number of UHF Stations	Number of VHF Stations	Total Number of Stations
Commercial Stations.....	590	551	1,141
Educational Stations.....	508	107	615
Total Stations.....	1,098	658	1,756

Source: BROADCASTING, Feb. 14, 1968, at 68.

If Table 3 is compared with the 1952 plan shown in Table 1 above, two additional facts may be noted. First, the 1966 allocation plan substantially decreased the number of UHF allocations from a total of 1,433 to 1,098. Almost no allocations were made on frequencies above channel 69.³⁷ Even more significant is the fact that the number of commercial UHF allocations was reduced from 1,271 to 590, while the number of educational allocations was increased from 162 to 508. This suggests that the FCC had come to the realization that its original allocation plan had made available far more commercial UHF channels than were likely to be used. At the same time, however, the FCC greatly increased the number of educational UHF allocations.³⁸ Evidently they felt a need for more educational channels.³⁹ Whether or not those unused but available allocations are likely to be used any time in the near future remains to be seen.

³⁶ This statement is not absolutely correct. Since the allocation table is changed slightly every few weeks or months, a few UHF channels may now have been added to the 1966 plan. The figure given, however, is a close approximation to the actual number available.

³⁷ UHF Television Use (Fifth Report), *supra* note 35, para. 1.

³⁸ On the question of the need for educational allocations, see NATIONAL ASSOCIATION OF EDUCATIONAL BROADCASTERS, THE NEEDS OF EDUCATION FOR TELEVISION CHANNEL ALLOCATIONS (1962) [hereinafter cited as EDUCATION-TELEVISION REPORT]; National Association of Educational Broadcasters, Educational Television Broadcasting: A Five Year Projection (mimeo. 1966) [hereinafter cited as NAEB Report]; CARNEGIE COMMISSION ON EDUCATIONAL TELEVISION, PUBLIC TELEVISION: A PROGRAM FOR ACTION (1967) [hereinafter cited as PUBLIC TELEVISION].

³⁹ The decision to reserve more channels for educational use was at least partly a result of a survey by the National Association of Educational Broadcasters. See EDUCATION-TELEVISION REPORT, *supra* note 38. For a discussion of the significance of this study, see UHF Television Use (Fifth Report), *supra* note 35, paras. 53-55.

There seems to be additional evidence that educational television is not likely to grow without continued government subsidy. It has been estimated, for example, that between 1962 and 1966, about sixty per cent of all money spent for construction of educational television facilities came from the Educational Television Facilities Act.⁴⁰ In addition, the Corporation for Public Broadcasting was established partly to deal with the problem of lack of money for educational television.⁴¹ Furthermore, various recent proposals concerning educational television all have one thing in common: they all imply that educational television can only grow with a considerable amount of direct or indirect government subsidy.⁴² While the All-Channel Law may have been a necessary condition for growth of educational television, it certainly does not appear to have been a sufficient condition. The actual viewing audience for educational programs will probably remain quite small, even when most persons can receive the programs on their television receivers.

C. Profits of UHF Stations

As a piece of special interest legislation, the law has undoubtedly helped some commercial UHF stations; however, its impact has been quite small. Since 1962, UHF stations as a group have made small profits in only three out of seven years, showing losses in the other four.⁴³ These losses or small profits are not too surprising in a rapidly growing industry. One would not expect new stations to show profits until they had been in operation for one to three years. Therefore, the average profits for an industry with a significant number of new stations each year will tend to be quite low.

On the other hand, the number of UHF stations reporting any profits before income tax rose from forty-three in 1962 to fifty-five in 1965, but fell to only fifty-three in 1968. This corresponded to 57.3 per cent of all UHF stations in 1962, 65.5 per cent in 1965, and 44.9 per cent in 1968.⁴⁴ Thus, it is not even clear that the absolute number of profitable UHF stations is growing. The number of UHF stations earning profits before taxes of over \$100,000 rose from nineteen in 1962 to twenty-four in 1966, and fell to twenty-one in 1968, while the number making

⁴⁰ NAEB Report, *supra* note 38, at 9. See also Educational Television Facilities Act, 47 U.S.C. §§ 390-97 (1964), as amended, 47 U.S.C. §§ 390-95, 397-98 (Supp. IV 1969).

⁴¹ Public Broadcasting Act of 1967, 47 U.S.C. §§ 390-99 (Supp. IV 1969). See generally *Hearings on the Public Television Act of 1967 Before the Subcomm. on Communications of the Senate Comm. on Commerce*, 90th Cong., 1st Sess. (1967); *Hearings on the Public Television Act of 1967 Before the House Comm. on Interstate and Foreign Commerce*, 90th Cong., 1st Sess. (1967).

⁴² See NAEB Report, *supra* note 38. See also Reply Comments of the Ford Foundation, Establishment of Domestic Noncommon Carrier Communication Facilities by Nongovernmental Entities, No. 16495 (F.C.C., filed Dec. 12, 1966); PUBLIC TELEVISION, *supra* note 38; J. DIMLING & G. COFFEY, THE EVALUATION OF ALTERNATIVES FOR THE PRODUCTION, DISTRIBUTION, AND FINANCING OF TELEVISION PROGRAMS (Spindletop Research, Inc., Apr. 1967); D. NETZER, LONG-RANGE FINANCING OF PUBLIC BROADCASTING (National Citizens Committee for Broadcasting, 1969); H. Goldin, *Financing Public Broadcasting*, in this symposium, p. 650.

⁴³ FCC, 1962-68 TV BROADCAST FINANCIAL DATA.

⁴⁴ *Id.*

profits of over \$200,000 rose from three in 1962 to seventeen in 1966, and fell to thirteen in 1968.⁴⁵ This suggests that while a few of the most profitable UHF stations may have been a little better off in 1968 than in 1962, the difference is negligible. The evidence then, does not yet indicate that the All-Channel Law has helped UHF stations. Evidently larger potential audiences do not immediately mean larger profits. In fact, it is quite likely that direct subsidies given to UHF not only would have been far more effective than was the All-Channel Law but also would have involved lower real costs to society.

D. Number and Diversity of Programs Available

One of the major goals of the All-Channel Law was to increase the number and diversity of commercial program choices available to viewers. We have seen that while the law may have had some effect on the growth rate of UHF stations, the effect was not substantial. Moreover, increasing the number of stations on the air appears to increase the number of program choices available to viewers only very slowly. Although the number of commercial stations increased from 535 to 666 between 1960 and 1968, one must note that since there were 272 television station markets in 1960 and 285 in 1968, the 131 additional stations which went on the air during that period did not even increase by one station the average number of stations per market.⁴⁶ Of course, there is some overlap of signals from one market to another, but that is not significant enough to change this conclusion.

In addition, most stations in markets with three or fewer stations are affiliated with the three national networks; and even in markets with over three stations, at least three of them are likely to have network affiliations. In 1968, for example, 201 stations were affiliated with NBC, 192 were affiliated with CBS, and 143 were affiliated with ABC.⁴⁷ This gives a total of 536 affiliated stations out of 635 stations then on the air.⁴⁸ Therefore, those 536 television stations provided much of the population the United States with no more than three different program choices at any particular hour.

In addition, there is a great deal of duplication in types of programs. One recent study defined twenty different categories of programs such as feature films, variety, news, dramatic adventure, dramatic comedy, sports, documentaries, fine arts, and so forth. A cross-section study of fifty-nine television markets indicated that during the period from 6 p.m. to 11 p.m., as the number of stations in a market rose from one to five to ten, the average number of different kinds of programs available per half-hour only rose from one to 3.61 to 6.05.⁴⁹ For all viewing hours,

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ J. DIMLING, R. MCCABE & W. SCHMIEDEKNECHT, IDENTIFICATION AND ANALYSIS OF THE ALTERNATIVES FOR ACHIEVING GREATER TELEVISION DIVERSITY IN THE UNITED STATES IV-10 (Spindletop Research, Inc., 1968).

⁴⁸ See table 2 *supra*.

⁴⁹ HERMAN W. LAND ASSOCIATES, INC., TELEVISION AND THE WIRED CITY: A STUDY OF THE IMPLICATIONS OF A CHANGE IN THE MODE OF TRANSMISSION 52 (table 7), 56-68 (July 1968).

it was found that as the number of stations increased from one to five to ten, the average number of different kinds of programs available per half-hour only increased from one to 3.10 to 4.38.⁵⁰ In addition, that study also indicated that as the number of stations increases, the number of types of programs available increases at a decreasing rate.⁵¹ It also indicated that an additional educational television station would increase the kinds of programs available far more than would two additional commercial stations.⁵² The inference which can be drawn from this study seems to be that adding extra commercial stations will not increase kinds of program choices very significantly. On the other hand, this does not deny that the viewer does get a choice of more programs, even if they are all of a similar type. Moreover, the division of television programs into only twenty categories may significantly understate the amount of diversity available.⁵³ It does suggest, nevertheless, that increasing the number of UHF stations on the air may have only a very small effect on diversity of programming.

Another question of considerable interest with regard to the increase in program diversity and the growth of UHF television is whether in the near future there will be enough commercial UHF stations to support a fourth network. The short life of the Overmeyer or United Network in 1967 indicates that there are not yet enough UHF stations or enough potential advertising revenue to support a fourth network.⁵⁴ A recent study suggests that even in 1980 there will not be enough stations or enough viewers to provide enough advertising revenue to support another network.⁵⁵ The possibility of another network developing under the current television system, therefore, does not seem to be a feasible method of increasing television diversity.

E. Number and Quality of Educational Programs

It has already been shown above that the All-Channel Law might be a necessary, but certainly not a sufficient, condition for increasing the number of educational stations. Clearly, far more money is needed, not only to increase the number of stations on the air but also to make available programs for these stations to show. Educational television stations need additional sources of programming and an interconnected national educational network if they are to be successful. Because they cannot depend on advertising as a source of revenue, their major problem seems to be to find adequate financial support,⁵⁶ and the benefits provided by the All-Channel Law are nonexistent in this area.

⁵⁰ *Id.* at 42, table 3.

⁵¹ *Id.* at 42-43, 53.

⁵² *Id.* at 44-46, 53-55.

⁵³ For example, continuing weekly series of such program types as crime, detective, war, western, espionage, etc., are all included in the category "dramatic adventure." *Id.* at 56-58.

⁵⁴ BROADCASTING, JUNE 5, 1967, at 34-41.

⁵⁵ DIMLING, McCABE & SCHMIEDERNECHT, *supra* note 47, at IV-7 to IV-18.

⁵⁶ See authorities cited notes 41 & 42 *supra*.

F. Local Programming

The final goal of the All-Channel Law was to increase the amount of programming of a specifically local nature, such as regional political, educational, religious, and sports programs. All indications suggest, however, that stations are never likely to provide much local programming, unless forced to do so by federal regulation. A recent survey of fifty-six commercial stations found that the average amount of local programming by those stations had stayed remarkably constant from 1962 to 1967, at about sixteen hours per week. It also found, as expected, that the amount of local programming for nonaffiliated stations was significantly higher than for network-affiliated stations.⁵⁷

This fact is easily understood. Stations prefer network or other nationally distributed programs which tend to draw large audiences. Only certain kinds of local programs, such as news, political programs, sports, and editorials, tend to draw reasonably large audiences.⁵⁸ In general, local programming has not been profitable, although there is at least one station which is an exception to that rule.⁵⁹ In spite of this exception, opportunities for much expanded local programming supported by advertising seem to be rather limited.

The general conclusion which can be drawn at this point is that the All-Channel Law has not been very effective in attaining the goals for which it was passed. Perhaps it has stimulated somewhat the growth of commercial and educational UHF stations, and perhaps it has slightly increased the profits of existing UHF stations, although even that is not certain. In any case, as a method of increasing the quantity and diversity of commercial and educational programs, as well as the amount of local programming, it does not appear to have been effective. Again, however, it will be easier to judge the long-run impact of the law after UHF television set penetration approaches one hundred per cent of all television homes.

III

THE COSTS OF THE LAW

Let us suppose, for the sake of argument, that the law did significantly contribute to achieving each of the six goals mentioned above. That still does not indicate whether or not the law was in the public interest. In economics, an important concept is "opportunity cost," which is cost measured in terms of the alternatives given up when a particular decision is made. The opportunity cost of a particular action often exceeds the actual cash or "out-of-pocket" cost of that action.

Therefore, we need to ask what was the opportunity cost of the All-Channel

⁵⁷ DIMLING, McCABE & SCHMIEDEKNECHT, *supra* note 47, at IV-19 to IV-23. Another recent study suggested that stations actually do a significant amount of local programming, but the data were presented in a way which made it impossible to get an over-all estimate of the amount. See HERMAN W. LAND ASSOCIATES, INC., *supra* note 49, at 170-252.

⁵⁸ DIMLING, McCABE & SCHMIEDEKNECHT, *supra* note 47, at IV-21.

⁵⁹ *Id.* at IV-22.

Television Receiver Law. In other words, what did it cost society, or what did society give up as a consequence of the passage of this law? A related question, to be discussed below in section IV, is whether there were and still are less costly methods of attaining the goals of the law.

A. Receiver Costs

The direct and most obvious cost of the All-Channel Law was the additional cost of a UHF tuner in television receivers which previously would have had only a VHF tuner. In hearings on the law it was estimated that the tuner would add between \$15 and \$30 to the retail price of television receivers.⁶⁰ The FCC, for example, suggested that the tuner would cause a retail price increase of about \$25.⁶¹ It is therefore interesting to note that in 1965 the FCC claimed that the law had not affected the retail price of television receivers.⁶² As it turned out, the later estimate of the FCC was evidently incorrect and based on a misunderstanding of the way the price index for television receivers was constructed.⁶³

Although, therefore, it is not clear just what effect the law had on the price of television receivers, it seems reasonable to believe that it added at least \$10 to their retail price.⁶⁴ Since 1962, the number of television sets sold at wholesale in the United States has increased from about seven million per year to about twelve million per year.⁶⁵ In the years 1959 to 1961, fewer than ten per cent of the sets sold were equipped to receive UHF. If we assume that the same percentages would have existed in future years if the All-Channel Law had not been passed, then the law raised the retail price by \$10 or more per set on ninety per cent of all receivers sold after 1964. For the years 1964 to 1968 this means that consumers were forced to pay an additional cost ranging from \$85 million to \$110 million per year for the UHF tuner on their all-channel receivers.⁶⁶

For that additional expense, consumers obtained a television receiver capable of receiving 82 channels, even though in 1970, six years after the law took effect, there is no television market with more than eleven commercial stations on the air. In addition, the number of UHF stations on the air only increased by ninety-one between 1964 and 1968,⁶⁷ during which time consumers had paid at least \$550 million dollars for legally required UHF tuners (on the purchase of fifty-five million television receivers).

This indicates that consumers have been paying on the average about \$6 million

⁶⁰ 1962 Senate Hearings, *supra* note 4, at 14-16, 19-21.

⁶¹ 1962 House Hearings, *supra* note 4, at 180-81.

⁶² 1965 FCC ANN. REP. 110.

⁶³ See D. Webbink, *The All-Channel Television Receiver Law and the Future of Ultra-High Frequency Television*, at 88-89 (unpublished Ph.D. dissertation, Duke University, 1968).

⁶⁴ *Id.* at 90-92.

⁶⁵ CONSUMER PRODUCTS DIVISION, ELECTRONIC INDUSTRIES ASSOCIATION, *CONSUMER ELECTRONICS 1968*, at 12.

⁶⁶ *Id.*

⁶⁷ See table 2 *supra*.

for each new UHF television station which went on the air. That appears to be a rather expensive subsidy to UHF television, considering that a small black and white station could probably be built at a cost of \$.3 million and have operating expenses of \$.3 million per year, while a full-color station could be built for between \$1 million and \$2 million and have annual operating expenses of perhaps \$.5 million to \$1 million.⁶⁸ If the \$550 million had been obtained through taxes and used to give direct subsidies to UHF stations (such as a grant of \$300,000 to all new UHF stations each year) instead of being spent on UHF tuners, far more UHF stations would have gone on the air. If consumers had still wanted to buy UHF tuners they could have done so, but they would not have been forced to pay for UHF tuners when they purchased new television receivers for use in parts of the country which did not have any UHF stations.

B. The Cost of Using the Frequency Spectrum

It is the indirect costs of the law, however, that make it really appear "expensive." Recently there has been a growing realization that the frequency spectrum is not a "free" good. In particular, its reservation for use by one particular kind of user (such as television) may have quite high costs in terms of the alternative uses for the frequency spectrum thereby given up.⁶⁹

For example, one might measure the value of the frequency spectrum as the excess monopoly profits or "rents" to users of the spectrum which could be taxed away without diminishing their use of the spectrum. This would be a measure of what users of the frequency spectrum would be willing to pay for the right to broadcast over the air rather than to give up that right. If it is assumed that all television profits higher than a twenty per cent rate of return on tangible property are monopoly rents, it could be estimated that in 1966 the value of the frequency spectrum in use by commercial television stations was at least \$290 million per year.⁷⁰

A recent report to the Federal Communications Commission suggests that whatever the exact opportunity cost of the frequency spectrum, large users of the spectrum, such as television stations, should pay far more than small users, such as land mobile radio systems. In fact, this report suggests that perhaps a television station should pay even 5,700 times as much for the amount of frequency spectrum it uses as would a "typical" land mobile system.⁷¹ It suggests, furthermore, that the

⁶⁸ Webbink, *supra* note 63, at 77-80, 102-11.

⁶⁹ Levin, *The Radio Spectrum Resource*, 11 J. LAW & ECON. 433 (1968). See also D. Webbink, *The Opportunity Cost of the Frequency Spectrum Allocated to Television Use* (unpublished paper, 1970).

⁷⁰ See Webbink, *supra* note 63, at 202-04. This estimate is based on a method used by Almarin Phillips. See A. Phillips, *Television and New Communications Technologies: An Overview of Public Policy*, at 31-33 (unpublished paper presented at the Meeting of the Southern Economic Association, Nov. 17, 1967).

⁷¹ *Value of the Land Mobile Communications to the Economy of the United States*, in FCC, REPORT OF THE ADVISORY COMM. FOR THE LAND MOBILE RADIO SERVICES 410-13 (1967).

frequency spectrum has a far higher productivity in uses other than television.⁷² In that case, society is paying a high cost in reserving those frequencies for television use. Although it is not yet clear just how the frequency spectrum should be valued, it is evident that it does have a large positive value. The increasing use of the UHF frequency spectrum as a result of the passage of the All-Channel Law should be included as a cost of that law, a cost which probably far exceeds the additional television receiver cost to consumers.

IV

ALTERNATIVES TO THE GROWTH OF UHF TELEVISION

There appear to be a growing number of feasible alternatives to the expansion of the number of UHF stations on the air. Most of these alternatives have in common lower real costs to the economy than the expansion of UHF. All of them have in common the fact that they would change considerably the existing structure of the television industry. The three most important of these at the present time appear to be community antenna television systems (CATV), subscription television (pay-TV), and the so-called "wired cities" proposal.

A. CATV

Of the three, CATV is the most important development as well as the only one which has already had a significant impact on the television industry.⁷³ CATV systems pick up the signals of distant television stations and rebroadcast them over wire to local subscribers. Because they use powerful antennas on top of high towers, they can bring in signals from stations located one hundred or even two hundred miles away. This fact, in addition to the ability of cable systems to carry a large number of programs simultaneously, enables CATV systems to provide up to forty different programs to households at relatively low costs per household. In most parts of the country the costs to individuals of setting up separate antenna systems would make it prohibitively expensive for them to receive as many as forty different programs.

Since CATV enables viewers to have a far larger number of program choices than would otherwise be available, and since it could increase the diversity of types of programs available, one would expect the FCC to be actively encouraging the growth of CATV. In fact, the FCC's actions have been exactly the opposite. They have limited the growth of CATV, primarily from a fear of what its effect might be on existing and potential future television stations.⁷⁴ The FCC's

⁷² *Id.* at 415-19.

⁷³ Fisher, *Community Antenna Television Systems and the Regulation of Television Broadcasting*, 56 AM. ECON. REV. PAPERS & PROC. 320 (1966); Fisher & Ferrall, *Community Antenna Television Systems and Local Television Station Audience*, 80 Q.J. ECON. 227 (1966); M. SEIDEN, AN ECONOMIC ANALYSIS OF COMMUNITY ANTENNA TELEVISION SYSTEMS AND THE TELEVISION BROADCASTING INDUSTRY (1965).

⁷⁴ See Amendment of Subpart L, Part 91, to Adopt Rules and Regulations to Govern the Grant

requirements that the CATV systems carry the signals of all stations within their grade B contour⁷⁵ and that they not duplicate programming of local stations by bringing in the same program from a distant station⁷⁶ do provide some protection for local stations without decreasing the viewer's possible choice of programs. The most important provision, however, was one that would only allow CATV systems to bring outside signals into the 100 largest television markets upon a decision by the FCC, following a formal hearing, "that such operation would be consistent with the public interest, and particularly the establishment and healthy maintenance of UHF television broadcast service."⁷⁷ This provision could have been used to stop the expansion of CATV into any of the major metropolitan areas, but a more recent proposal by the FCC might significantly modify that rule. It would allow CATV systems to bring distant signals into the 100 largest television markets, without any formal hearing, but only if the system obtained permission of the stations whose signals it was rebroadcasting.⁷⁸ Evidently the FCC believes that those stations would charge the CATV system for the right to rebroadcast their signals, thus avoiding the "unfair competition" of having CATV systems rebroadcast signals they had picked up without paying any charge.⁷⁹

There are two dubious propositions contained within the FCC's analysis. First of all, it is not obvious whether a free market transaction will cause CATV systems to pay television stations for the right to rebroadcast their programs in order to get a larger CATV audience and more profits for the CATV system, or whether the station will pay the CATV system to have its programs rebroadcast, so that the station will cover a larger audience and be able to earn larger advertising revenues. So long as the station is willing to allow its program to be rebroadcast, it is not very important to consumers in which direction the payments flow. Both the CATV system and the television station will gain, and in addition the viewer will receive more program choices.⁸⁰ Such a plan would not necessarily stop the growth of CATV, as the broadcasting industry may hope.

The other dubious proposition in the FCC proposal concerns the use of the

of Authorizations in the Business Radio Service for Microwave Stations to Relay Television Signals to Community Antenna Systems (First Report and Order), 30 F.C.C. 683 (1965); *id.* (Second Report and Order), 2 F.C.C.2d 725 (1966) [hereinafter cited as CATV Rules (Second Report)]. For an analysis of the economic significance of the Second Report and Order, see Greenberg, *Wire Television and the FCC's Second Report and Order on CATV Systems*, 10 J. LAW & ECON. 181 (1967).

⁷⁵ CATV Rules (Second Report), *supra* note 74, para. 66.

⁷⁶ *Id.* para. 49.

⁷⁷ *Id.* para. 141.

⁷⁸ Amendment of Part 74, Subpart K, of the Commission's Rules and Regulations Relative to Community Antenna Television Systems (Notice of Proposed Rule Making), No. 18397, 33 Fed. Reg. 19028, para. 43 (F.C.C., released Dec. 13, 1968) [hereinafter cited as CATV Amendments]. The First Report and Order in this Docket, issued October 24, 1969, did not address itself to this proposal. 34 Fed. Reg. 17651 (1969).

⁷⁹ CATV Amendments, *supra* note 78, para. 35.

⁸⁰ For other examples on the question of how legal rights affect payments, see Coase, *The Problem of Social Cost*, 3 J. LAW & ECON. 1 (1960); Demsetz, *Some Aspects of Property Rights*, 9 J. LAW & ECON. 61 (1966); Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. PAPERS & PROC.

phrase "unfair competition," which appears often in FCC discussions of UHF television and CATV. It is not really clear what "unfair competition" consists of, but evidently it means that UHF stations will be hurt "too much" or will be "too unprofitable." Why the FCC should believe that it needs to protect the existence of any particular station is not at all clear, but it definitely does exhibit that belief. One thing does seem clear: Either it is "unfair" for CATV systems to rebroadcast programs without permission, or it is not. If it is "unfair," then it becomes totally irrelevant whether the signals will be rebroadcast into the largest city or the most sparsely populated part of the United States. If it is "fair" to rebroadcast signals without permission in small markets, then surely it is fair everywhere.

Evidently there were three major reasons why the FCC wanted to limit the growth of CATV. First, it was felt that CATV would be unable to serve rural areas. Second, it was argued that CATV was a kind of "pay-TV" and should not replace "free TV." Third, it was held that CATV did not serve as an outlet for local programming, such as programs of a local religious, educational, or political nature.⁸¹

It only seems necessary to review a few of the fallacies in this argument. If CATV systems are far less costly than over-the-air broadcasting, they could be required to provide broadcasting to remote areas without increasing the total communication cost over what it is at present. Therefore, the desire to maintain television in rural areas is no reason to limit the growth of CATV. In addition, free TV is not "free" but paid for by advertising and ultimately higher prices on consumer goods. It seems apparent that the real cost of television to consumers might be far lower if they paid for television programs directly rather than indirectly through advertising. Finally, CATV does, in fact, have the capability of providing more local programming than the expansion of the number of UHF stations will ever provide.⁸² The recent requirement by the FCC that large CATV systems originate local programming at least admits their ability to do so, even though it goes too far in making it a requirement.⁸³ The actual value of local programming, and the need to regulate the industry in order to promote it, are also open to serious question.

Although the FCC is beginning to move in the direction of recognizing that CATV may have merits, it has not yet fully realized that CATV is in the public interest, even if it were to hurt existing UHF television stations quite severely. In fact, it can be reasonably argued that if CATV does provide viewers with considerably more choice, as long as it does not cause programming to be unavailable to a significant portion of the population, it should be allowed to grow without restraint no matter how many UHF television stations might actually or possibly

347 (1967); De Alessi, *Some Implications of Property Rights Structures for Investment Choices Within the Government*, 59 AM. ECON. REV. 13 (1969).

⁸¹ CATV Rules (Second Report), *supra* note 74, para. 124.

⁸² See Greenberg, *supra* note 74, at 185-91. For an example of the kinds of programming a CATV system might provide, see White, *Toward a Modest Experiment in Cable Television*, PUB. INTEREST, Summer 1968, at 52.

⁸³ CATV Amendments (First Report and Order), *supra* note 78, app., para. 2.

go bankrupt in the process. The FCC ought not to confuse the public interest with the interest of any specific industry, even if that industry is the broadcasting industry.⁸⁴

B. Pay-TV

Another possible alternative or at least supplement to increasing the number of UHF stations on the air would be the use of subscription television systems or "pay-TV." Such systems would charge viewers separately for each program they watched. On that basis programming could be provided to fit the tastes of small minority groups, as long as the minorities were willing to pay the cost of the programs.⁸⁵

Again, one could expect the FCC to look on pay-TV quite favorably, since it could conceivably provide substantial diversity and additional program choices to viewers. However, the initial actions of the FCC in December 1968 indicate considerable caution and a desire to place a number of restrictions on pay-TV. To be more specific, the FCC will only permit pay-TV to operate in cities which already have four or more other commercial stations on the air,⁸⁶ and only one pay-TV station will be allowed in any single community.⁸⁷ In addition, the pay-TV stations will not be allowed to have any commercials,⁸⁸ the movies they can show will be limited almost entirely to those which are less than two years old;⁸⁹ and they will not be permitted to show sports events which were available on commercial television within the previous five years.⁹⁰ In addition, because of possible Congressional interest in pay-TV, the FCC took the unusual step of promulgating rules which would not take effect for six months, in order to give Congress a chance to consider whether new laws related to pay-TV ought to be passed.⁹¹

⁸⁴ For a similar view, see Comments of the U.S. Department of Justice at 10, 12-14, in CATV Amendments, *supra* note 78 (F.C.C., filed Apr. 7, 1969).

⁸⁵ On pay-TV, see generally Suellflow, *Subscription Television: What Are the Chances of Success?*, 79 PUB. UTIL. FORT. 25 (1967); Suellflow, *Subscription Television: Should Subscription Television Be Regulated?*, 80 PUB. UTIL. FORT. 23 (1967). See also Joint Comments of Zenith Radio Corporation and Teco, Inc., in support of Petition for Nationwide Authorization of Subscription Television, Amendment of Part 73 of the Commission's Rules and Regulations (Radio Broadcast Services) to Provide for Subscription Television Service, No. 11279 (F.C.C., filed Mar. 10, 1965) [hereinafter cited as Subscription Television Service], reprinted in *Hearings on Subscription Television Before the Subcomm. on Communications and Power of the House Comm. on Interstate and Foreign Commerce*, 90th Cong., 1st Sess. 240-335 (1967). On the question of whether "free TV" can provide programming for minority tastes, see Blank, *The Quest for Quantity and Diversity in Television Programming*, 56 AM. ECON. REV. PAPERS & PROC. 448 (1966); Wiles, *Pilkington and the Theory of Value*, 73 ECON. J. 183 (1963); Steiner, *Program Patterns and Preferences, and the Workability of Competition in Radio Broadcasting*, 66 Q.J. ECON. 194 (1952).

⁸⁶ Subscription Television Service (Fourth Report and Order), *supra* note 85, 14 P & F RADIO REG. 1601, para. 165 (1968).

⁸⁷ *Id.* para. 200.

⁸⁸ *Id.* app. D.

⁸⁹ *Id.* para. 285.

⁹⁰ *Id.* para. 288.

⁹¹ *Id.* para. 19.

Again, it is not clear why many of these requirements are desirable or in the public interest. Some of them may not be very significant, but those which limit the kinds of programs which may be shown and prohibit advertising could be extremely significant. These restrictions are based on the assumption that this is necessary in order to make pay-TV different enough from "free TV" so as to protect the latter from too much "siphoning" of its programs.⁹²

If these restrictions have the effect intended by the FCC, they are more likely to make pay-TV a substitute for movie theaters than for "free TV." Therefore, it should be obvious why the movie theater industry has been so strongly opposed to pay-TV.⁹³ One can only hope that the movie industry will be unsuccessful in blocking the growth of pay-TV and the realization of its potential benefits to society.

C. Wired Cities

The so-called "wired cities TV" proposal provides a third alternative to further growth of UHF stations, at least in the major cities. Such a system might provide ten or forty television programs on a single coaxial cable, including both "free" and pay-TV channels, thus combining the best aspects of both CATV and pay-TV. In addition, such a system could include facilities for computer input and output, facsimile, teletype, telephone, alarm systems, stock market reporting services, and so forth. Finally, as in the case of CATV, it could provide low cost local-interest programming.⁹⁴

Like CATV, a wired cities system could provide a far larger choice of programs than could be made available under an extension of the current system. By serving millions of viewers it might make possible additional viable national television networks. In addition, it could provide signals of much higher quality than those received over the air, because of the far lower levels of noise and interference on coaxial cable than on over-the-air broadcasts. These features alone would make it a desirable system even if its real resource costs were the same or higher than those related to an expansion of UHF stations.

The wired cities system is particularly attractive because it would make programs available at far lower real costs to society than would the expansion of UHF television. A recent study by Barnett and Greenberg suggests that a city of 100,000 homes could be wired with a twenty-channel system at an investment cost of \$60 per household, or a total cost of \$6 million. They estimate that the cost savings from the elimination of house antennas for color sets and the possible reduction in the sensitivity of television sets would amount to at least \$9 million.⁹⁵ In addition, they

⁹² *Id.* paras. 131-33.

⁹³ U.S. NEWS & WORLD REPORT, May 12, 1969, at 56.

⁹⁴ Barnett & Greenberg, *A Proposal for Wired City Television*, in *Communications and the Future: A Symposium*, 1968 WASH. U. LAW Q. 1; Barnett & Greenberg, *On the Economics of Wired City Television*, 58 AM. ECON. REV. 503 (1968). See also DIMLING, McCABE & SCHMIEDERNECHT, *supra* note 47, at IV-25 to IV-73 & app. D, at D-1 to D-23; Phillips, *supra* note 70, at 12-15, 29-33.

⁹⁵ *A Proposal for Wired City Television*, *supra* note 94, at 20-22. However, one might suspect

estimate that the wired cities system would result in a cost saving of \$500,000 for each television station because it would no longer need to have a high-power transmitter on an antenna tower.⁹⁶ Perhaps most important, if there is a shortage of the frequency spectrum as has been claimed recently, then there may be large savings to society by making spectrum currently used by television stations available for other uses. Although Barnett and Greenberg gave no estimate for the value of the frequency spectrum, it was suggested earlier that the value of the spectrum in use by television in 1966 might have been as high as \$290 million per year. In that case, the savings generated by television stations' not using the frequency spectrum would be substantial.

Finally, it should be noted that because the cable system could be used for a variety of other purposes, the \$60 investment per household for the cable television system could also pay for many other kinds of services. If the costs of the system were allocated among the other uses such as telephone, teletype, and so forth, then the cost for television viewing alone would be far less than \$60 per household.

It is interesting to note that a considerable segment of the broadcasting industry is opposed to the wired cities idea, for reasons which can be easily understood.⁹⁷ Following the adoption of a wired cities system the facilities of many local stations might become obsolete and redundant. Since networks could send their signals directly into the cable system, they would no longer need local stations; and since local stations would lose their major source of programming, audiences, and ultimately revenue without the support of the networks, many of the local stations might go bankrupt. Only to the extent that they could exist on the basis of their own or independently distributed program sources would they continue to be viable.⁹⁸ In addition, the existing television networks are not eager to have new competing networks come into existence.

An FCC inquiry in December 1968 included a number of questions addressed to problems in this area such as those mentioned above.⁹⁹ In addition, a recent proposed agreement between the National Association of Broadcasters and the National Community Television Association is undesirable insofar as CATV systems would agree not to interconnect.¹⁰⁰ This would defeat much of the possible cost advantage of the wired cities system, since there might be great economies of scale

that their estimate of the average price of outdoor color TV antennas is too high, thus causing an overestimate of the cost saving to consumers. In addition, another recent study suggests investment cost might be \$170 or more per household. See DIMLING, McCABE & SCHMIEDEKNECHT, *supra* note 47, at D-1.

⁹⁶ *A Proposal for Wired City Television*, *supra* note 94, at 22. Of course that cost saving would provide little consolation to station owners whose existing transmitters and antennas were made obsolete by a wired cities system.

⁹⁷ See generally HERMAN W. LAND ASSOCIATES, INC., *supra* note 49.

⁹⁸ DIMLING, McCABE & SCHMIEDEKNECHT, *supra* note 47, at IV-63 to IV-64; HERMAN W. LAND ASSOCIATES, INC., *supra* note 49, at 13-14.

⁹⁹ CATV Amendments, *supra* note 78, paras. 60-61.

¹⁰⁰ BROADCASTING, June 2, 1969, at 23-26.

from interconnecting. For that reason neither the FCC nor the Antitrust Division of the Justice Department should allow it to stand. It is far too early to predict what will be the ultimate actions of the FCC or the television or CATV industries with respect to the wired cities. However, if it can offer a low cost alternative to expanding UHF television, one can only hope the FCC will not limit it in any way.

CONCLUSION

The preceding discussion has reviewed the reasons why the All-Channel Law was passed. It was suggested that there were six major goals of the law, including that of subsidizing the growth of new commercial and educational UHF stations, increasing the profits of existing UHF stations, increasing the number and diversity of commercial and educational programs on the air, and fostering more specifically local programming. Although the law has met all of these goals to some extent, it has had much greater effect with regard to the first three, which subsidized stations, and far lesser impact with respect to the others, which subsidized programs and are of much greater importance to the viewing public. In addition, we found that the law was considerably more expensive for the public than the FCC has maintained, and it has become even more obsolete in light of the new technological and economic developments such as CATV, pay-TV, and wired cities. These new developments would far better serve the last three goals than would expanded use of UHF frequencies.

The FCC recently proposed further restrictions on all-channel television receiver sets in order to make tuning of UHF channels as easy as tuning of VHF channels.¹⁰¹ If my conclusions are correct, new restrictions on UHF television receivers which would further raise their price would definitely not be in the public interest. In fact, where CATV, pay-TV, or wired cities TV could provide a possible alternative, new UHF stations ought not to be encouraged at all.

In light of that supposition, it is particularly disheartening to note the statement in March 1969, at the annual meeting of the National Association of FM Broadcasters, that what FM radio needs in order to be competitive with AM radio is an all-channel radio receiver law which would require all radio receivers to receive FM as well as AM.¹⁰² Perhaps that is what FM radio needs, but it is certainly not what the public needs. Eventually, we may even see proposals before Congress and the FCC that would require all new television receivers to be color sets, or all new FM radios to be stereo FM radios. Before Congress passes any more laws of the type which forbid manufacturers from producing any specific device, one can only hope that it will consider more carefully the costs of such laws as well as other possible alternatives available. Although some groups may gain from production

¹⁰¹ All-Channel Television Broadcast Receivers (Notice of Proposed Rule Making), No. 18433, 34 Fed. Reg. 1732 (F.C.C., released Jan. 31, 1969).

¹⁰² BROADCASTING, Mar. 31, 1969, at 56.

restrictions, such laws should not be passed unless it can be shown that society as a whole gains.

The major single reason for the passage of the All-Channel Law was probably that it was expected to help existing UHF television stations. If that supposition is correct, the law was essentially a piece of special-interest legislation to subsidize a particular group of business firms. Even if that motive were acceptable, the law was a very inefficient method of attaining the goal.

There is no adequate justification for the existence of the FCC or of other regulatory agencies, such as the Federal Trade Commission, Interstate Commerce Commission, and Federal Power Commission, except to protect consumers from certain kinds of actions by business firms. No regulatory agency should ever be allowed to protect any firm or industry from the possibility of loss or bankruptcy which would come as a result of new competition. With regard to the FCC, if it is true that changes in the present industry technology and structure (such as the development of CATV, pay-TV, and wired cities) would bankrupt a number of existing television stations, that is irrelevant. The only question which is relevant is whether or not the viewing public would be better off with unrestrained development of those new technologies.¹⁰³ The losses or bankruptcy of any particular television station should not even be under consideration in FCC proposals unless it can be proven beyond any doubt that the viewing public would lose more than it gains from that bankruptcy.

Therefore, the conclusions to be drawn here are clear. The All-Channel Television Receiver Law was a mistake. Although such action is unlikely in view of FCC inflexibility, the law should now be repealed. At the very least, it should not be strengthened through further restrictions on all-channel television receivers.

Finally, it must be said that to date the FCC has been far too rigid in its emphasis on past decisions and precedents. It has also tended to confuse means and ends. The making of a particular decision in 1952, for example, is not an adequate reason for the FCC to be bound by that decision in 1972, or even in 1962. If conditions change the FCC ought to be flexible enough to ignore or completely reverse earlier decisions. In order to be flexible the FCC needs to emphasize ultimate long-run goals and to realize that any particular method of attaining those goals should be dropped whenever a more efficient or "better" method becomes available. Although regulation by the FCC would be substantially improved if it behaved in this manner, its past actions give one little reason to be optimistic about that possibility.

¹⁰³ Of course, it has not been proven by any means that pay-TV, for example, will have a harmful effect on existing television stations or movie theaters. Perhaps the movie theaters are fighting something which holds little threat to them. But even if pay-TV would bankrupt half the movie theaters in the country, that is no reason to prevent its growth.