to be that whatever is good for the networks or the broadcasters is also good for the public."[54] Several attempts have been made to show that broadcast industry pressure has been particularly successful when efforts have been made to reorganize the FCC or redirect its policy. Examples include the attempt by the Kennedy Administration to reorganize the FCC in 1961[55] and the FCC proposal to limit commercial broadcast advertising time in 1963.[56]

Other analysts who have been in agreement with the industry pressure interpretation have been much less critical of the role of the broadcast industry. For example, Bernard Schwartz, who headed an investigation of regulatory commissions in the fifties, has written that although there have undoubtedly been "constant efforts to influence the Commission":

> The powers vested in the FCC are so tremendous, giving it virtually uncontrolled life-and-death authority over the broadcast industry, that those engaged in broadcasting simply cannot afford a Commission that is hostile to them.[57]

Thus, while it is still the FCC-industry relationship that is the focus of attention, the positions are reversed with the Commission considered the dominant force determining the direction of the broadcasting industry. A rationale for the significance of this relationship is provided by James Landis in his Report on Regulatory Agencies to the President-Elect. Here he notes that contacts between the FCC and industry

"are frequently productive of intelligent ideas" while contacts with the public are "generally unproductive of anything except complaint."[58]

Another extra-regulatory influence that has received much attention in the literature has been the Congress. Krasnow and Longley argue that the FCC is preeminent among organizations subject to constant Congressional scrutiny.[59] Furthermore, they consider matters to be complicated by the fact that unlike the broadcasting industry, Congress is often rather vague about what it actually wants from the Commission. They argue that consequently

> One of the tasks of the FCC, then, is to make crucial decisions when the wishes of Congress are quite unclear, but the pressure is very real.[60]

This view has been supported by Laurence Laurent in his introduction to Newton Minow's Equal Time. Laurent considers the frustrations of the FCC members who

> may be admonished one day by the Chairman of the Senate Commerce Committee for being too aloof from members of the broadcasting industry ... . In the very next session the same FCC member may be advised by the very same Congressman that he has gotten too close to the broadcasting industry.[61]

Minow himself concurs with this position. He claims that while serving as Chairman of the FCC he "heard from Congress as frequently as television commercials flash across the screen."[62] Finally, Walter Emery, in his book Broadcasting and Government, criticizes the extent to which the FCC has been

"investigation-ridden" by the Congress and particularly by the Commerce Committees in each House.[63] While the recent growth of the Office of Telecommunications Policy has begun to shift some of the criticism of extra-agency governmental influence to the executive branch,[64] the Congress and the broadcasting industry generally continue to be considered the major external influences on FCC decision-making.

A second basis upon which the Commission has come under critical scrutiny has come from those who concentrate not upon external pressures on FCC activity, but rather on its statutory indpendence. It is generally felt by these analysts that independence tends to separate regulatory agencies such as the FCC from the support that it needs in order to execute its policies with some measure of efficiency and consistency. Following this line of thinking, Brinton has argued that it is "isolation from presidential leadership and control ... lack of continuous or effective legislative guidance ... as well as the evident apprehension of the courts" that has led to what he considers the failure of the FCC.[65] More significantly, according to him, it has contributed to the removal of "significant issues of policy from the fullest possible public discussion and debate."[66] Bernstein expresses a similar concern in his discussion of the tendency of independent regulatory commissions to suffer a rapid "decay" because, he claims, they are isolated by law from "energizing"

sources of political support.[67] He considers

> the single most important characteristic of regulation by commission ... the failure to grasp the need for political support and leadership for the success of regulation in the public interest.[68]

A third major source of critical analysis has been the internal policy and organization of the FCC. Some have focused on the Commission's alleged attachment to the goal of localism or the belief that broadcast stations should be established in as many locations as possible with the control of both ownership and programming concentrated at the local level. While one might very well argue that the standard of localism is actually a legislative mandate emanating from both the Radio Act of 1927 and the Communications Act of 1934 and therefore ought to be considered as simply another source of Congressional influence, most have treated it as a goal to which the FCC has become independently attached. This interpretation made by Roger Noll, Merton Peck and John McGowan in their recent work Economic Aspects of Television Regulation. They argue that concern for localism has limited the opportunities for achieving other values that the Commission and policy analysts have considered to be desirable. They claim that the standard of localism has hampered efforts to achieve a diversified system of programming because it has led the FCC to prohibit the establishment of regional stations that might in fact be sources of such diversity.[69] It is also

felt by the authors that Commission attachment to localism has been one of the contributants to cross-media concentration because

> Often the most capable and eager local groups seeking a television station license has been a local newspaper or radio station.[70]

Finally, they argue that the concept of localism has protected the three network system and therefore restrained competition by preventing the major group stations such as those controlled by Metromedia and Group W (Westinghouse) from organizing into a fourth major network.[71] In a recent analysis of the FCC, Wilson has basically concurred with this interpretation. He claims that localism merely promotes "a certain bland sameness."[72]

Wilson can perhaps be more closely linked to another internal factor that has also been prominent in the critical analysis of Louis Jaffe. Both have argued that rather than consider the Commission as industry oriented, it is best to consider regulatory agencies like the FCC as "regulation-oriented." According to Wilson:

> They are in the regulation business, and regulate they will, with or without a rationale. If the agencies have been 'captured' by anybody, it is probably by their staffs who have mastered the arcane details of rate setting and license granting.[73]

Other criticisms of the Commission's internal operations have more specifically focused on its failure to

analytically develop long-range policies as well as the ability to implement them in an efficient manner. This argument has been particularly prominent in government analyses of the FCC over the last 35 years.

In the first major governmental investigation of the FCC conducted by the Presidential Committee on Administrative Management, attention was particularly concentrated on what it claimed was the inability of the Commission to formulate "integrated government policy."[74] A little over a decade later, after an extensive investigation, the Hoover Commission arrived at a similar conclusion:

> The Commission has been found to have failed both to define its primary objective intelligently and to make many policy determinations required for effective and expeditious administration.[75]

The Hoover Commission study claimed that the inadequacies of the FCC's staff has not only forced the Commission to depend upon broadcast industry engineers for data and advice, but it has in addition to this contributed to a "lack of order, continuity, consistency, long-range planning and political stature in the commission itself."[76] This emphasis upon the inability to develop general policies and to administer them efficiently was reemphasized by another Presidential body in 1951. After brushing aside the argument that FCC difficulties stem from the amount of work before it, the President's Communications Policy Board claimed that the Commission was unable to

> deal effectively with the workload before it because it has not formulated the broad policies to guide its decisions, and thereby expedite handling of cases ...[77]

It should be noted that there has been no Presidential monopoly on explicit criticisms of the FCC from this perspective. A task force report to the Senate Commerce Committee in 1958 (known as the "Bowles Report") arrived at similar conclusions in concentrating upon what it considered to be a Commission tendency toward expedience rather than efficiency and consistency.[78]

Three reports commissioned by the Executive Branch in the 1960s have followed the pattern of their predecessors in respect to the FCC. Reporting to President-Elect Kennedy, the Landis Commission viewed the FCC as unable to deal with its problems efficiently, in both the long and short term for it is "incapable of policy planning" as well as of "disposing within a reasonable period of time the business before it."[79] Two years later, a report of the Booz, Allen, and Hamilton organization, sponsored by the Bureau of the Budget, arrived at similar conclusions. While the report is critical of the lack of Congressional funding for the FCC, it focused particularly upon the lack of rational administration in the Commission. It concluded that

> Ensuing years will see the Commission engage in an increasingly futile attempt to meet its statutory responsibilities unless, by conscious effort, it is able to establish more clearly its objectives and

> criteria, to obtain support requisite to its towering responsibilities, and to maximize the efficiency of its administrative machinery ...[80]

A few years later, a Johnson Administration Task Force focused more specifically on what it considered to be a failure on the part of the FCC to develop an analytic capability. It pointed out that despite internal reorganization and the incorporation of computer facilities, the Commission still lacked the

> capacity for analysis of major issues having technical, economic and regulatory policy dimensions, even when these issues are central to its regulatory responsibilities.[81]

Two recent examples of this line of criticism have come from the Nixon Administration. The 1971 report of a Presidential Council chaired by Roy Ash was critical of the Commission's reliance on what the Ash Council considered piecemeal decision-making procedures particularly the extent to which the Commission focused on individual cases rather than on general policy-making.[82] A final example is contained in a 1972 report issued by the newly created Office of Telecommunications Policy. It focused, as did the Roosevelt Administration report in 1937, on the lack of policy formulation by the FCC:

> The Commission has published no formal statement of its telecommunications objectives, relying instead on the pronouncement in the (Communications) Act. Whereas it has issued policy statements in a few specific instances, it has no telecommunications policy per se ...[83]

These examples are typical of the conclusions that government studies have produced on the FCC. They indicate the extent to which the Commission has been consistently criticized for what is considered to be an inability to analytically develop goals, turn them into policy formulations and efficiently implement them.

Criticism from this perspective has not been limited to government analyses. This is particularly evident in a recent analysis of television station ownership by Cherington, Hirsch, and Brandwein. The authors focus in part on the failure of the FCC to derive criteria from analytical rather than a priori grounds:

> ... the FCC, even when it may have recognized the derivative nature of guidelines and specific critieria, either did not clearly trace these derivative elements from what should have been its basic policy objectives- or imperfectly traced them on a priori grounds rather than on analytical and statistical grounds.[84]

Similar conclusions are reached by Schwartz as well as by Friendly. The former criticizes the Commission for failing to implement even those few policies that it has established,[85] while the latter concludes his critique with the assertion that "... the Commission need not have drifted quite so helplessly for twenty-eight years."[86]

The above series of criticisms directed at the FCC are indicative of why I earlier considered comments to the effect that the Commission is generally "under the gun" to be perhaps

somewhat understated. These criticisms have often linked an alleged performance failure on the part of the FCC to quite contrary sources. On the one hand, we have seen some arguing that the Commission is ineffective because it is excessively dependent on particular interests such as the major commercial broadcasters and the Congress. On the other hand, some argue that the FCC's problems are rooted in its lack of ties to important sources of support, i.e., it is too independent. One cannot at times avoid the impression that the critics are speaking about different organizations. One problem, as I see it, is that analysts have often concentrated on judging the FCC from a particular perspective on how the Commission should operate. Assessments of FCC performance are often made on the basis of rational assumptions about the processes by which it pursues or fails to pursue particular objectives of the analyst. Thus, it may be that those who see excessive dependence are viewing the FCC as failing to optimize its regulatory or control function, while those who focus on its independence do so because they see the Commission as failing to maximize its promotional function (e.g., fostering industry growth). While there is no doubt real value in looking at the ways in which the FCC does or does not measure up against a desired standard, arguments about what the agency ought to be doing have clouded serious attempts to understand precisely what the Commission is doing and how it is going about doing it. Before one can begin discussing what the Commission ought to be doing, it is

necessary to first develop a model which avoids explicit assumptions about rational processes and specific values.

It is unfortunate that an analysis of major approaches to understanding the operation of organizations such as the FCC leads one into difficulty in any attempt to find perspectives which do not incorporate explicit assumptions about rational organizational behavior. Typical of the statements made in attempts to provide some theoretical underpinning to the analysis of the FCC is the following one by Noll, Peck, and McGowan in which the primary assumption to be made is that

> ... the FCC's decisions are the result of rational, optimizing behavior. Given the information available to them, the commissions attempt through their decisions to maximize some objective function.[87]

It is my contention that assuming that the Commission has an explicit objective, the attainment of which it seeks to optimize or maximize, actually glosses over what very well may be an important characteristic of the FCC, i.e., that it may not actually have explicit objectives and does not operate in an optimizing fashion. An approach that may help us to deal with this problem is discussed at greater length below following an outline of possible approaches that are based on the literature that has just been reviewed.

Four Approaches to Comparative Analysis: Introduction

The critical analyses that have just been reviewed are suggestive of bases for comparing the processes that have been involved in the four case studies. What follows is a more explicit discussion of four approaches that might be considered in comparing processes across these cases. The first three perspectives under discussion are clearly derived from the critical literature on the Commission and are generally based on what I consider rational assumptions about organizational processes. The fourth or cognitive model is one that does not include such rational assumptions and is the one that is hypothesized to be useful for comparing processes in the four cases. It is important ot preface this discussion with the statement that in outlining possible approaches for this comparison of decisional processes, I do not intend to set up a system of categories t at might lead me to prejudge the data. They are suggestive of possible ways to explain the activity of the FCC in the four cases that comprise this comparative analysis.

The Rational Actor Approach

The first approach has carried many labels. A few of these are discussed below in order to better understand the fundamental characteristics of the approach. Following this, possibilities are suggested for applying this perspective to this comparison of decisional processes.

Allison has characterized this approach as the "rational-actor" paradigm. He develops it in the context of his analysis of decision-making during the so-called "Cuban Missile Crisis":

> ... the point of an explanation is to show how the nation or government could have chosen to act as it did, given the strategic problems it faced. ... if the nation performed an action of this sort, it must have had a goal of this type. ... Predictions about what a nation will do or would have done are generated by calculating the rational thing to do in a certain situation, given specified objectives.[1]

Thus the focal unit for the purposes of analysis is treated as an individual attempting to maximize the attainment of specific objectives.

Simon has discussed this approach in terms of what he calls the "means-ends schema"[2] or the application of logically connected tactics to a hierarchy of goals:

> In the process of decision those alternatives are chosen which are considered to be appropriate means for reaching desired ends. Ends themselves, however, are often merely instrumental to more final objectives.

> We are thus led to the conception of a series, or hierarchy, of ends. Rationality has to do with the construction of means-ends chains of this kind.[3]

This process of logically applying means to ends has been characterized by Katz and Kahn as "machine theory" because those who defend its explanatory usefulness argue, at least implicitly, that

> just as we build a mechanical device with given sets of specifications for accomplishing a task so we construct an organization according to a[4] blueprint to achieve a given purpose.

Attention is generally concentrated on the specialization of organizational tasks, the standardization of roles and the integration of decision-making power.[5]

Steinbruner has termed this approach the "analytic paradigm" and attempts to apply it along with other perspectives to decision-making on the once-proposed Multilateral Force. Employing the image of the "blueprint" that is often used in discussing this approach, he considers the basic process to be one one of decomposing problems into components and evoking a deliberate procedure to reach a decision. Of primary importance in this procedure is the reduction of possible action states to a comparable metric. Thus, an optimal solution is sought under given constraints through direct calculation. Cost-benefit analysis is discussed as an application of this approach.[6]

To summarize, according to the "rational-actor"

perspective, the organization is considered to be a consistent unit that attempts to maximize the attainment of a particular value or values after having translated a specific collection of objectives into a preference set and after having assessed the consequences of each component of that set. It is assumed therefore, that the organization is an integrated unit that has particular ends before it and actively seeks out the best possible ways to achieve those ends by rationally assessing the value of every alternative means.

How would one apply this perspective to the processes that have characterized FCC decision-making in the four cases under analysis? One way would be to determine a particular value or hierarchy of values that the Commission has generally considered to be desirable and assess the extent to which decision-making in these cases has been characterized by a rational assessment of a variety of alternatives for attaining that value or set of values. For example, some have considered a localized system of broadcasting to be the primary standard by which the Commission has rendered decisions. Has this value been prominent in the decision-making on FM radio, UHF, cable, and subscription television? Can we, as Allison suggests "reconstruct" the process of activity in each of these cases to show that the FCC generally sought to maximize the development of stations in as many localities as possible with control of ownership and programming decentralized to the local

level? The task then is to isolate a particular value, such as localism, or set of values, such as localism and a diversity of program content, and show that an attempt to attain them is the most useful way to compare decision-making processes across cases.

The Internal View

The second basis for making process comparisons can be considered as an outgrowth of a problem that has been linked to the first. The problem stems from the fact that the rational-actor view is derived from consideration of the organization as a consistent unit. It is argued that this assumption ignores the extent to which individuals within the organization are differentially attached to its values. As Katz and Kahn write in their critique of "machine theory":

> The concepts paid little attention to the subsystems of organization with their differential dynamics and their own interchange within the organization. Each subsystem in the process of interchange codes and filters its input according to its own characteristics.[1]

In other words, from this perspective, one must consider the ends of sub-units such as particular bureaus or those of individual members themselves. An organization comes to be viewed less as a monolith and more as a loose coalition of units that attempt to maximize the attainment of somewhat different values.

One especially good development of this approach is presented in Anthony Downs' work Inside Bureaucracy. Downs argues that the efficient internal coordination that is often assumed as a constant in "rational-actor" analyses is in actuality rarely present because

> the very nature of large organizations creates a number of obstacles that prevent efficient spontaneous coordination. These obstacles fall into two major categories: conflicts of interest and technical limitations. ... The need to reduce such conflicts to an acceptable level gives rise to hierarchical authority structures.[2]

While the development of hierarchy helps to alleviate conflicts over differing interests as well as such technical limitations as the maldistribution of information,[3] it also tends to generate different types of role behavior at different levels in the hierarchy. Downs develops a typology of officials that is based on the "nature of the position" that is occupied by the official who seeks convenience and security in his position:

> The middle levels of a bureau hierarchy normally contain higher proportions of conservers ... such conservers as ex-climbers unable to rise higher, "natural" conservers at the peaks of their careers, and middle-aged officials who have lost their youthful energy.[4]

One source of explaining FCC behavior, therefore, may be traced to differences among officials along the hierarchy of authority. This very point is made by Noll who claims that the Commission is biased against innovation because of just such a preponderance of middle level "conservers" in its ranks.[5]

Another basis from which to understand decision-making processes from the internal view is based on differing interests that can develop from the vertical differentiation of the organization or the division of tasks as opposed to

the division of authority. The literature on organizations is replete with statements on the benefits of specialization. Many classic acronyms, such as Luther Gulick's POSDCORB, have developed as a means of recalling the "proper" way to obtain the best form of specialization.[6] It is evident from recent studies, such as Chandler's comparative analysis of the development of major American business firms,[7] that no optimum mode is possible since any form of task division involves costs. This is true whether such divisions are based on functional or substantive criteria, as well as whether they are tightly coordinated in a centralized structure (e.g., the Ford Motor Co.) or decentralized in a quasi-market divisional arrangement (e.g., General Motors). One primary basis for this assertion is the fact that specialization tends to breed loyalties to the particular assigned task that are often detrimental to the achievement of general organizational goals.

The FCC has had two major shifts in its form of vertical specialization which can be traced to this factor. Until 1938 the Commission was organized on a divisional basis with different Commissioners and staff assigned to distinct functions such as broadcasting, common carrier, and mobile services. After that year the Commission was reorganized on a departmental basis (legal, technical, etc.) in order to allow all Commissioners to take part in decisions involving communications regulation, thus allegedly preventing the development

of distinct allegiances to particular functions. Finally in the early fifties, the Commission followed the recommendations of the Hoover Commission and reorganized on the basis of functional divisions among bureaus. Today the Commission is organized into five bureaus: Common Carrier, Broadcast, Cable Television, Safety and Special Radio Services, and Field Engineering.

To summarize: in order to apply the internal view to this analysis, one would look for the influence of sub-units within the Commission attempting to achieve particular values.

Before turning to the third perspective to be considered, it is important to note a similarity between the internal and rational-actor approaches. As has been pointed out, the latter treats the organization as a unit that seeks to maximize one or more values. While the internal approach differs from this in that the organization is considered not as a consistent unit, but as a loose coalition, it does treat the elements of this coalition as rational-actors attempting to achieve what may be conflicting standards. This common thread of value-optimization running through these two perspectives is also contained in a third approach which focuses on the organizational context.

The Organizational Context

While the above two approaches differ to the extent that attention is directed to internal organizational dimensions, both are also similar in that they focus attention on the organization as the center of explanation. Thus, whether the Commission is treated as a rational actor or as a loose coalition of actors, the basis of explanation continues to be the organization itself. Haas and Drabek, among others,[1] consider this to be a significant weakness of these perspectives:

> ... organizations are viewed as existing in a vacuum. External environments, as constraint systems, which might serve as sources of change, are not mentioned. Organizational change is viewed as originating with internal decision-making given stated objectives. External pressures for change exerted at varied levels within the organizations are excluded.[2]

A third approach that has been suggested in the literature is to consider the significance of the relationship between the FCC and those organizations that are within its environment.

It has been only recently that analysts of organizational behavior have explicitly begun to recognize the significance of the organizational context for understanding the behavior of the focal organization.[3] Furthermore, the primary focus of many of these analysts has been on the forms of technology in the immediate environment of the organization. Technology has been considered as the chief determinant of the structural characteristics that define the organization as well

as the behavior of its members.[4] Another possibility is to consider the environment not as a form of technology, but as a set of organizations that interact with the organization of primary concern. According to this approach, one considers the interaction of external organizations with the FCC in making comparisons of the processes that have led to the attainment of specific outcomes.

Such external organizations include other governmental organizations that are concerned with the regulation of broadcasting. Among these are the Congress, particularly the Commerce Committees in each House, the Executive, particularly through the White House Office of Telecommunications Policy, the Department of Justice, especially the Antitrust Division, and the Departments of State, Defense, and H.E.W., as well as various branches of state and local governments. In addition to these are industry organizations such as the three major broadcasting networks, multiple station owner groups, the National Association of Broadcasters, and the National Cable Television Association, among others. Finally, foundations, commissions, and so-called "public interest" groups are also considered among contextual organizations.

It is important to recognize that the organizational context perspective opens up areas that extend beyond a concern for the extent to which a particular organization is constrained, or, in the language that is commonly employed to

describe the FCC, "captured" by other organizations. While this area is an interesting one to consider, and no doubt popular among critics, it is also one that is perhaps somewhat overly simplistic.

One can consider it to be overly simplistic on two counts. First, it fails to deal with the extent to which the focal organization attempts to develop a constituency relationship with organizations in its environment. In other words, is it not equally important to consider the possibility that an organization like the FCC actively seeks out its environment by investing in an administrative constituency? Among the few suggestions for considering this perspective is that of Huntington in his analysis of the Interstate Commerce Commission:

> If an agency is to be viable, it must adapt itself to the pressures form sources so as to maintain a net preponderance of political support over political opposition. It must have sufficient support to maintain and, if necessary, expand its statutory authority, to protect it against attempts to abolish it or subordinate it to other agencies and to secure for it necessary appropriations.[5]

Thus, this perspective suggests that one not only consider outside influence as a possible basis for understanding decision-making processes in the four cases, but also the extent to which the Commission actively seeks out that environment as a basis of support.

A second basis for considering the organizational constraint model to be overly simplistic is the fact that it

focuses upon one relationship: that between the organization under analysis and those in its environment. It ignores the extent to which relationships among the latter influence the focal organization. In other words, one might inquire into the extent to which the relationship between major commercial broadcasters and the House Commerce Committee influences FCC decision-making on broadcast innovations rather than simply deal with the broadcaster-FCC or Congress-FCC relationships. Such a perspective has been suggested by Emery and Trist in their analysis of an industrial firm that declined significantly due to a failure to appreciate changing relationships among organizations in its environment.[6] Thus, particularly in an environment that is undergoing rapid change and becoming more complex, factors within that environment over which an organization has little control or even little knowledge may interact to cause significant changes.

The organizational context approach expands the basis of understanding decisional processes beyond the boundaries of the organization that formally makes decisions. It does so first by suggesting that we look into the extent to which external constraint is a key element in those processes. Secondly, it leads us to consider whether the need for the focal organization to invest in a potentially supportive environment is a factor. Finally, it suggests that we consider the changing relationships among forces comprising that environment

in the analysis of decisional processes. In these ways it provides an alternative to the rational-actor and internal approaches.

It should also be understood, however, that the organizational context perspective shares an important element in common with these two views. Like the others it assumes that units seek to maximize the attainment of values. While the set of units is different, i.e., a group of organizations as opposed to a single one or parts of one, it still assumes rational maximization in the decision-making process. The fourth perspective, one which forms the basis of my hypothesis on comparing processes across cases, differs from the others in that it is an attempt to understand organizational behavior without including such assumptions about rationality.

The Cognitive Perspective

LeDuc has summarized well most of the literature on the FCC when he termed it "eminently rational."[1] He claims that there is one "thread" linking a number of studies of the FCC:

> it has been the nearly universal condemnation of its efficacy in formulating communications policy.[2]

A good deal of evidence has been presented to support this view. Yet, LeDuc appears to understate the case. For one can probably show that indeed most studies of organizations in general can be considered "eminently rational." As has been suggested recently by Steinbruner:

> The most frequently used theories of collective decision in a political context are based upon analytic assumptions.[3]

He points to such analysts as Marx and Freud, whose views were vastly divergent in many areas, but whose fundamental assumptions were nevertheless the same: "an actor proceeds rationally once his values are set."[4]

Why has this been so? Why has it been that for many years the extent of the changes that have been made in fundamental assumptions about the way in which organizations operate, have been variations on the rational perspective? It is not my purpose to engage in a detailed intellectual history of the subject. Such a detour would take us into areas such as the

debate over Kuhn's argument on the tendency of particular paradigms to remain dominant despite a decline in their applicability.[5] While this is a fascinating area of inquiry, it is not useful for my analysis to directly off into it.

Nevertheless, I think that two factors are well worth discussing in order to better understand both the alternative approach that is to be suggested as well as how it is to be applied.

One important reason why explanations based upon the rational approach have maintained their dominant position is suggested by Steinbruner. He argues that the idea of rationality has all too frequently been linked "in our habits of mind" with the concept of adaptation. The result is that

> the only evidence against rationality thus becomes behavior which seems obviously maladaptive. Since adaptation is so closely related to survival itself, maladaptive behavior is perforce a rare event. The slowness to challenge rational assumptions in any radical way seems closely related to this association with adaptation.[6]

One of the basic values of the cognitive model is that it provides us with a means to use the notion of adaptation without connecting it to the concept of rationality.

Another important factor, related to the above one, is that it takes more than conjecture about alternative possibilities to bring about a shift in underlying assumptions. Arrow has recently suggested that it is a preponderance of "coercive fact" that is in reality "more persuasive than any

speculation about potential benefits from change."[7] Since the rational perspective has been so closely linked to the idea of adaptation, it has been difficult to find a way in which to break the tautology that develops from such a link with "coercive facts." Explanations are often simply not subject to falsification.

The idea that coercive fact is more important than speculation about alternatives in bringing about change is instructive not only for understanding the lack of change in modes of explanation used by analysts, but also in explaining the lack of change in the general strategies used by organizations. It is suggested here, and discussed at greater length below, that it may be a lack of perceived "coercive facts" which explains why the FCC has not shifted its own broadcasting strategy despite a good amount of speculation about alternatives.

The link between the rational approach and adaptation, as well as the lack of impact of speculation about alternatives have contributed to the continued significance of what Steinbruner calls the analytic approach.[8] However, he argues that this approach is increasingly coming under severe strain and may be giving way to an alternative perspective. He claims that this emanates from an increasing concern with the inability of the analytic approach to prove useful in dealing with complex decision problems. I now explore this claim made by Steinbruner and others, as well as suggest ways

in which an alternative approach can prove more useful.

One important reason why the analytic approach is proving difficult to use is because it assumes an infinitely open organizational agenda. In other words, the analytic perspective takes for granted the ability of organizations to consider all relevant factors. Thus, for example, if the FCC perceived a problem to exist in the broadcasting system, it would be assumed that the Commission would conduct a comprehensive search for potential solutions to this problem. The analytic approach is generally at a loss to deal with the failure to undertake such a search, or, more generally, the failure to consider all relevant variables. Arrow has recently referred to this in his analysis of problems associated with what he calls "maximization theory":

> In classical maximizing theory it is implicit that the values of all relevant variables are at all moments under consideration. All variables are therefore agenda of the organization, ... On the other hand, it is a commonplace of everyday observation that the difficulty of arranging that a potential decision variable be recognized as such may be greater than that of choosing a value for it.[9]

One of the central characteristics that is considered in comparing the four cases is the problem that each has had in finding a place on the FCC agenda.

The organizational agenda is not the only item whose uncertainty is often ignored under the analytic paradigm. This approach generally conceives of uncertainty in a

narrow way. It is assumed that an inference structure can be imposed on a decision-making problem with variables that are reduceable to a comparable metric. It is furthermore generally assumed that the range of possible outcomes is known in advance and that the rules governing the problem area are specifiable and stable. The only matters that are left to the decision-maker are the determination of the particular values to be maximized and the calculation procedure. However, experience with organizations has made it clear that a set of assumptions such as these makes it very difficult to understand many of the problems that organizations come up against. As Steinbruner indicates:

> the imposition of enough structure on the situation, so that possible outcomes can be described and their probabilities of occurrence estimated is itself a matter of uncertainty.[10]

The entire process of structuring a complex problem is considered to be subject to much uncertainty rather than to explicit guidelines. This is particularly true of the complex problems that often comprise the work of organizations. By complex problems, I specifically refer to the following characteristics:

1. The central variables of the problem may take a multiplicity of possible values.

2. Problems are embedded in structural uncertainty, i.e., an imperfect correspondence between the information

available to the organization and its actual environment;

3. The decision-making power is dispersed among several parties.[11]

Because these factors are so often an integral part of the decision-making process, the analytic approach provides an insufficient basis for explanation. It is necessary to build an approach for understanding how organizational processes develop in response to complexity. One might argue from this perspective, for example, that in certain situations a structure will be imposed on an area of decision-making not so much because of its usefulness for reaching an optimal solution to a specific problem, but rather in order to resolve the uncertainty of a complex situation. This imposed structure may be rooted in a strong preconceived belief in the kind of outcome that is in some sense proper or may emanate merely from a long-established technique for simplifying complex problems. These possibilities derive from a consideration of the cognitive approach. It is valuable for the social scientist because it provides a way to consider organizational beliefs as perhaps other than goals to be achieved in an optimally rational way. For the policy maker, it provides a way to consider organizational processes that do not appear to be clearly rational as at least other than "deviant" and hence to be rejected as unproductive for achieving desired outcomes.

My conception of the cognitive approach is derived

in large measure from Steinbruner's formulation as well as from a recent work by Arrow. It is to a great extent based on questioning matters that are considered assumptions under the various analytic approaches outlined above. An overview of the cognitive approach is presented now and it is applied to the four cases in ensuing sections.

Among the central assumptions of the cognitive approach is the recognition that the information-handling ability of organizations is a scarce commodity. While in the analytic perspective it is assumed that organizations can deal with all relevant material, the cognitive approach leads us to recognize that organizations are limited in their ability to search for and process relevant information. This limitation is even more pronounced under the conditions of complexity outlined above. There is thus a cost to the organization for its information processing activities. To deal with such costs, organizations typically develop a set of rules or codes to govern the way in which information is handled. In other words, it develops working assumptions about the areas that are to be considered legitimate sources of relevant information and, in addition, develops procedures for processing it. It is important to recognize, however, that the very process of establishing such a set of assumptions involves costs. As Arrow has noted:

> Drawing up rules to take care of all possible relevant contingencies is itself highly

> costly in terms of effort and in particular of information, namely, information about the range of possible contingencies and their effects.[12]

Thus, there are costs attached not only to the processing of information, but also to the development of rules to expedite such processing. Because of these costs, organizations generally limit the procedure for developing rules, and, in addition, impose limits on the processing of information.

One way in which limitations are developed is by relying on the set of rules or working assumptions that were established early in the organization's history. By following patterns set in its formative years, an organization avoids the costs of shifting its code. Arrow points to this in his discussion of the centrality of history for understanding organizational processes:

> ... history matters. The code is determined in accordance with the best expectations at the time of the firm's creation. Since the code is part of ... the organization's capital, ... the code of a given organization will be modified only slowly over time.[13]

Why is it only modified slowly, if at all? Arrow provides an answer with his economic metaphor. He considers the process of code formation

> an irreversible capital accumulation for the organization. It follows that organizations, once created, have distinct identities, because the costs of changing the code are those of unanticipated obsolescence.[14]

Thus, a first important notion that is derived from the assumption of a scarcity of information processing ability is

that organizations rely on historically established codes for accomplishing their tasks. These codes help to define not merely the procedures to be used, but the ways in which problems are perceived and the areas in which solutions are sought.

This last notion leads us to a second important insight. Because of the costs attached to the processing of information, the search for solutions to perceived problems is generally conducted in the area of established information channels. For, as Arrow notes, it is

> cheaper to open certain information channels rather than others in ways connected with these abilities and this knowledge. Thus, an explorer in hitherto unknown territory will find it easier to explore new areas near to those he has already covered. Geographical propinquity is but a special case. It is cheaper to proceed to the chemical analysis of compounds similar to those already studied.[15]

The point is that once one recognizes that there are significant costs associated with organizational search, it is easier to understand organizational behavior that is difficult to comprehend under the analytic approach. It becomes clearer why organizations continue to perceive problems in certain ways and continue to concentrate on specific areas for the solution to these problems even when it becomes apparent that problems should perhaps be perceived differently and solutions sought in new areas. Citing the example of the investment analyst, Arrow argues that

The fact that information has a strong

> capital component means that once an investor has chosen a selected list of securities, he will stay within that group, because additional information about the same is cheaper than acquiring the initial information about other 16 securities needed to begin meaningful analysis.

There are two major sources of increased costs linked to a shift in the organizational code. One is derived from the costs of investing in the establishment of a new code. The other, perhaps less obvious, is derived from the early obsolescence of the original code.

It is important to understand, however, that what is being argued is not that the strategy outlined here is the most efficient way in which to deal with organizational problems. On the contrary, it is often a very inefficient way to proceed, at least in terms of meeting general organizational goals. This is particularly true in situations characterized by a good deal of complexity. Arrow's discussion of the military is most instructive here:

> Research and development on military weapons is, in the present era, an important auxiliary service. But ... it tends to be run by men who think in military terms and therefore expect coordination of achievements at predictable time points in the future. In fact, of course, predictable research and development are prime examples of information-gathering with a considerable degree of uncertainty, and achievements are certainly not predictable. As a result the precisely laid out timetables are dramatically unfulfilled ...[17]

The reason that timetables are unfulfilled is that the cognitive structure within which the military operates

makes it difficult for it to deal with the complexities of unpredictable tasks. Efficiency is lost because new information is filtered in through preconceptions that organizations have established over time. This is the point where the work of Arrow and Steinbruner meet. Arrow establishes the reasons why organizations stay within the bounds of historically established perspectives. Steinbruner develops this further, particularly by pointing to the results of this pattern for organizations that operate within environments characterized by a high degree of complexity.

Steinbruner argues that organizations respond to complexity in a number of ways that are difficult to understand when operating from analytic assumptions. The following are some of the response patterns that are important for the purposes of this analysis.

1. Organizations typically respond to complexity by imposing a structure upon it rather than by using probabilistic methods of an objective or subjective type. The goal is to eliminate the uncertainty of variety by developing a set of simple rules in order to act in the face of great complexity. According to Steinbruner, the organization

> constantly struggles to impose clear, coherent meaning on events, uses categorical rather than probabilistic judgments in doing so, and thus expects to anticipate outcomes exactly rather than having to assign probabilities to a range of outcomes.[18]

Thus, a trade-off appears to be made. In return for its

ability to act in some consistent way despite the complexity, the organization becomes less open to new sources of information. The organization essentially avoids the complexity by operating within the confines of its simplified cognitive structure.

2. Organizations generally ignore information that does not conform to this cognitive structure. Rather than being engaged in a process of constantly reevaluating its preference set in the light of new data, organizations avoid the potential uncertainties that such new data may bring. As Steinbruner well argues:

> ... uncertainty control entails highly focused sensitivity. Since the response sequences adjust to a very narrow range of information, most incoming information will be shunted aside, having no effect. This decision-maker is not calulating alternative outcomes and will also not be broadly sensitive to pertinent information.[19]

3. Organizations also attempt to avoid the value conflicts that are characteristic of the complex problem. An example would be the response to the standard conflict over deciding whether to pursue "guns" or "butter." The response is often enough a denial that such values are actually in conflict with one another followed by an assertion that both can be pursued at the same time.

4. A number of more subtle mechanisms exist which assist organizational actors in the management of complexity. The following are several prominent ones:

a. Images and Arguments from Analogy

These are well established notions which have been used to structure similar situations in the past. An example is that of falling dominoes in the so-called "domino theory." According to Steinbruner, these conceptions

> provide internal anchors around which inference mechanisms of the mind can structure ambiguous information.[20]

He argues that they are particularly useful because they

> have strngth independent of direct evidence, a strength which derives from the simplicity and coherence of the inference structure they imbody....[21]

b. Inferences of Transformation

The complexity of competing values is often dealt with by splitting these values into short and long run components. Thus, conflicts are avoided by claiming to pursue one value for the short run, while relegating the other to the long run. This has been a common tactic of the FCC for responding to innovations into the broadcasting market. As is discussed below, the FCC typically considers innovations not so much in conflict with established broadcasting structures as long-run possibilities to supplement the short-run established system. Conflicts which might mean the gain of one value at the expense of the other are transformed into equally favorable values within their respective time frames.

c. Inferences of Impossibility

This is a mechanism by which complexity is avoided

through the use of negative logic. As Steinbruner argues:

> In formal systems of logic, an elaborately constructed argument can be invalidated by the discovery of a single contradiction. Thus, an empirical generalization in mathematics, which might be based upon considerable positive evidence, can be destroyed by a single negative instance.[22]

As applied to organizations, one can argue that competing claims are avoided by setting up a system whereby one piece of negative evidence can be used to nullify these claims. This is discussed below as a prominent aspect of the FCC's handling of innovations, particularly that of frequency modulation radio.

5. The final set of response patterns are modes of thinking that are common within the cognitive perspective. It is argued that organizational actors adopt characteristic modes of thinking in order to deal with complexity which do not conform to modes expected from actors operating within an analytic framework. Two of these discussed by Steinbruner are considered in the analysis of the FCC.

a. Grooved Thinking

This mode provides the organizational member with a way in which to simplify complex problems. It involves the application of long established techniques to problems whether or not the context of these problems has changed significantly. This is basically a conceptualization of Arrow's notion that organizations tend to consistently apply techniques that have

been long established in the processing of new information.

b. Theoretical Thinking

This is also a simplifying mode. However, it involves not the application of established techniques, but rather the imposition of historically developed beliefs to particular problems. According to Steinbruner, it is one in which

> the decision maker adopts very abstract and extensive belief patterns, patterns which are internally consistent and stable over time and to which he displays a great deal of commitment.[23]

This is to some extent a conceptualization of Arrow's idea that organizations consistently use established channels for the processing of new information.

In sum, the cognitive perspective provides a way in which to understand how the forces of history and complexity affect the operation of organizations. More specifically, it points to how organizations consistently utilize historically established instruments to simplify the variety that a complex environment presents. It provides a way in which to understand behavior that is difficult to comprehend under the analytic assumptions of the rational-actor, internal, and contextual approaches earlier considered. Before turning to a consideration of how this perspective is to be specifically applied to the FCC's response to innovations into the broadcasting market, two concluding points are made.

First, while my approach is, to a great extent,

dependent upon Steinbruner's recent formulation, it is important to understand one area in which my approach deviates from his conception. Steinbruner basically views the cognitive model as grounded in psychological assumptions. Chief among these is the assumption that individuals strive for cognitive consistency. Thus, in the face of a complex environment, Steinbruner argues that organizational actors relieve uncertainty by applying a consistent structure to that environment.[24] In the case of the FCC's regulation of broadcasting, he might argue that the FCC has developed a particular conception of what the broadcasting system should be like, not from some rational calculus or because of industry pressure, but in order to relieve the psychological uncertainty of operating in a complex environment. While I would agree with most of this statement, I do not feel that it is necessary to accept the latter component of his interpretation in testing the general utility of the approach. One can instead argue, combining notions of both Arrow and Steinbruner, that the conception of the way the broadcasting system should operate is something that has developed from a number of historical precedents and the pressure to simplify a complex environment in order to operate, rather than from an assumed psychological need to relieve uncertainty.

A second important point where Arrow's analysis provides us with a more useful basis for applying the cognitive

approach is in the area of understanding organizational change. This is one of the few areas in which Steinbruner's otherwise very thorough analysis appears to be lacking. One cannot help but get the impression from Steinbruner's argument that once a particular cognitive structure is developed to simplify a complex environment, there is no basis from which to conceive of the organization changing that structure. While one of Steinbruner's major contributions is the elaboration of arguments for understanding why organizations avoid change, these arguments make it difficult for us to conceive of change taking place. Arrow provides a way to deal with change within the basic framework of Steinbruner's approach.

Arrow does this by considering the significance of "coercive facts":

> ... the opportunity benefit, that is, the change in benefits due to a change in action, may rise because of a decrease in the return to the present, unexamined, action. In plain language, we have a "crisis." In William James' term, a "coercive fact" may be more persuasive than any speculation about potential benefits from change. The sinking of the Titanic led to iceberg patrols.[25]

The point is that organizations generally change, not from the development of alternative possiblities, but rather from a perceived crisis situation. Speculation is treated as excess variety which is avoided by the organization in its attempt to deal with a complex enviroment by imposing a simple cognitive structure upon it. It is generally only those "coercive facts" that cannot be ignored which lead the

organization to reevaluate its fundamental processes.

This argument is considered in the case of the FCC. In particular, it is suggested that one reason why there is an apparent consistency in the processes that characterize the FCC's response to innovations into the broadcasting market is the fact that the FCC membership has perceived no such "coercive facts" or crises which would lead it to change, despite a good deal of speculation about alternatives suggested by proponents of broadcasting innovations.

Application of the Cognitive Approach: General Considerations

It was noted earlier that the cognitive approach provides for the policy maker a way to consider organizational processes that do not appear to follow from analytical assumptions as at least other than "deviant" and hence to be rejected as unproductive for achieving desired outcomes. I consider this to be of particular importance because the few statements in the literature on the FCC that implicitly refer to the cognitive approach do so as part of a general criticism of the FCC's failure to abide by the assumptions of the analytic framework. For example, Coase is critical of the FCC's inability to change, not because of external pressure or internal conflicts, but because as an organization it

> must inevitably adopt certain policies and organizational forms which condition its thinking and limit the range of its policies.[1]

In a similar way, Borchardt has criticized the Commission because he believes that while it recognizes the conflicting values of participants, it

> ordinarily closes its eyes to the polycentric nature of the conflicts and treats them as separate from each other.[2]

Criticism in this area has been particularly strong from governmental organizations that have investigated the FCC. The Hoover Commission criticized the FCC for having "failed ... to define its primary objective."[3] The Bowles Report accused

the FCC of "indecision, lack of affirmative policy and inconsistency."[4] Finally, the Landis Report charged that the FCC "has drifted, vacillated and stalled in almost every major area."[5]

These statements are suggestive of the empirical viability of considering the cognitive approach as a basis for making comparisons among processes. However, since the statements are made from a traditional analytic perspective, they do not provide us with a theoretical alternative to that perspective. In other words, evidence of a failure to define standards, to be consistent, to deal with conflicts as interconnected, etc. are treated as deviations from a particular conception of what constitutes a correct decision-making process, rather than as attributes of an entirely different approach. The value of the cognitive approach lies not only in its ability to provide an independent theoretical basis for comparing the above criticized processes, but also because it assists in at least considering the <u>possibility</u> that under conditions of structured complexity, such criticism, while perhaps based on sound evidence, <u>may</u> be unproductive for making sound policy.

The cognitive approach suggests that we consider a series of historical precedents which establish a clear cognitive primacy for a strategy that an organization uses in approaching its task. It is surmised that it was such a series

of historical developments that has contributed to Commission attachment to the view that AM radio and VHF television constitute the primary bases for the American system of broadcasting.

Such precedents include the development of AM radio into a national system not only before all of the innovations that comprise my analysis, but also prior to the establishment of the FCC. In addition, VHF television was established in major markets before the advent of UHF commercial development, and certainly before that of cable and subscription television. It has been argued, particularly in the VHF case, that these events are merely evidence of the power of interests supporting AM and VHF. I do not think that on balance the historical record is supportive of this position and I discuss this in detail when I turn to individual cases.

Further important historical developments are concerned with problems that the FCC associated with the early regulation of AM radio. In order to understand these problems, it is important to recognize that government regulation of the broadcasting system began as an attempt to bring order to what was considered an increasingly chaotic system. The growing confusion developed because stations were using the same spectrum area in the same communities and therefore interfering with one another. Most of the time spent by Herbert Hoover, then Secretary of Commerce and responsible for radio regulation,

was taken up with responding to complaints about technical interference.[6] According to Emery:

> Typical of the complaints were those which came as a result of two broadcasts in Washington. For three successive Sundays in 1922, two stations in the Capitol City broadcast services from these churches at the same time on the same wave length. The result was anything but heavenly.[7]

Regulation through the Federal Radio Commission thus began because the nature of the radio spectrum requires the orderly assignment of scarce space to stations.

Perhaps more importantly, it began in an environment characterized by an anxious industry approaching a reluctant government. Hoover considered it to be one of those rare situations in which the industry was practically united in its eagerness for government regulation. Addressing the first of several National Radio Conferences in 1922, he noted that:

> This is one of the few instances that I know of in this country where the public- all of the people interested- are unanimously for an extension of regulatory powers on the part of the government.[8]

This eagerness grew when court decisions in 1923 and 1926 severely restricted the regulatory power of the Secretary of Commerce.[9] By making the granting of licenses to every applicant mandatory and by limiting the Secretary's discretionary authority solely to the selection of a wave length, the possiblity for bringing order to the chaos of the air waves under the existing regulatory system practically disappeared.

This was changed somewhat with passage of the Radio Act of 1927 and the establishment of the Federal Radio Commission. However, the latter was not to be an instrument of complete government control over the broadcasting system. All that the government would do is promote the orderly development of the industry (i.e., AM radio broadcasting) by insuring that the system would not regress into the chaotic interference that characterized the early days of broadcasting. It would not assign stations to localities according to a prearranged schedule, nor would it control the interconnection of stations into networks. Such actions would entail excessive government interference into a system that was intended to be subject to free market competition. This is important because it led to what were considered to be significant problems.

First, since stations developed in areas of high population density where advertising revenues would be greatest, many areas, largely rural, were deprived of service. The FCC viewed this development with alarm when in its 1938 Annual Report it noted that 8.1% of the total population and 38.5% of the total land area in the U.S. were out of the "good-service area of any standard broadcast station" for daytime service and that for nighttime viewing the figures increased to 17.4% and 56.9% respectively.[10] In 1939 the FCC once again discussed the problem and considered these to be its chief sources:

> limited assignments available as compared to the demand therefor, the economic factors arising from the distribution of the population, particularly in the sparsely settled areas, and the present state of technical development of broadcasting.[11]

A second development that was derived also, at least in part, from a reluctance to regulate, was the increasing control of stations by a few major interests, particularly those represented by the major networks. This too was perceived to be a problem. The Commission was concerned with developments such as the following one expressed in its "chain broadcasting" study:

> As of the end of 1938, less than 3 percent of the nations total nighttime broadcasting power was utilized by stations not affiliated with one or the other of these three network companies.[12]

Both the lack of rural service and the increasing control by the networks helped lead to a more active regulatory role on the part of the FCC. What was significant, beyond the fact that it became active, was the channel into which that activity was focused. While the Commission did not consider it possible to restructure an industry that it had helped to promote and into which the American people had invested millions of dollars, it could make certain that it would avoid these problems with new media sources. For example, in the case of FM radio, the FCC not only developed a plan of station assignments, but it also limited the power of individual stations in particular markets. FM would help deal with the problems that emanated

from the Commission's free market policy toward AM. Similar responses are explored in the UHF, CATV, and STV cases. Thus, rather than attempting to deal with problems of the established system through the promotion of innovations into that system, the FCC simply attempted to insure that these innovations would not develop similar perceived problems.

A further historical fact of significance is that certain innovations began as ancillary to already existing systems. I am considering here primarily CATV which began as a system to provide better reception of programming being broadcast over the air. It began as ancillary not out of explicit Commission policy, but because this was considered by all concerned, including the operators of CATV systems, to be its primary function, given the state of its technical development.

It was thus a constellation of historical factors which contributed to the placement of AM radio and UHF television at the top of the FCC's conception of its regulatory agenda. It is furthermore argued that neither the rational selection of priorities on the part of the Commission, nor its alleged capture by an industry monolith are among these factors. Following my attempt to establish historical bases for what the FCC considered to be of primary significance on its agenda, I then discuss the <u>significance</u> of such "agenda primacy." Here it is the cognitive approach, through its con-

<u>concern for the significance of complexity in the operation of</u>

organizations, which provides further help. By complexity, I am referring chiefly to two characteristics of the FCC's work:

1. The FCC has always had a great deal of work, but this amount has been accelerating over time relative to the resources that are at the Commission's disposal to deal with it.

2. Not only does the Commission have a quantitatively large task, but in addition, much of its work is characterized by uncertainty about its role and the possible consequences of its actions. In other words, since decision-making responibility in this area is often vaguely assigned and since there are many possible values that variables comprising the decision-making process may take, uncertainty is systematically built into the Commission's task.

I suggest that it is these two factors that make it extremely difficult for the FCC to continually revise its agenda by considering innovations into the broadcasting market other than relative to the existing system.

By combining the ideas of historical precedent and complexity, I posit the following as an outline of the most useful interpretation of the processes that have characterized FCC decision-making in the cases to be analyzed.

1. A series of historical events established AM radio and VHF television as primary to the FCC's conception of how the broadcasting system should operate. Considered in light

of Arrow's earlier discussed notion on the premature obsolescence of the organizational code, one would expect significant costs to the FCC to be attached to any shift of these items out of their position of primacy. In other words, AM and VHF are areas into which the FCC has invested its organizational resources and any shift out of these areas would involve the costs not only of investing such resources in new areas, but also costs derived from the early obsolescence of the Commission's initial investment.

2. Furthermore, the amount of work that the FCC is required to perform makes it even more costly for the Commission to take on the additional job of reassessing its agenda by considering innovations as potential competitors for primacy.

3. Another factor increasing these costs is the uncertainty that characterizes the FCC's work. In other words, since the Commission is often not certain about its power to rearrange its agenda and since it cannot assess the probability that such a rearrangement would produce a more satisfactory system, the costs of change become even more prohibitive.

4. The Commission simplifies this complexity by imposing a basic conception of how the system should operate that is derived not from a calculated preference set, but from its historically established agenda.

5. Speculation about alternative possiblities for the broadcasting system does not carry the weight that severe disruptions in the existing service would carry as an impetus for change. While the former has abounded, the lack of the latter or what was earlier referred to as "coercive facts" makes it all the more difficult for the Commission to be open to change.

6. The FCC avoids conflicts between competing systems by splitting them up between short-term and long-term possibilities. The established system is looked on as the short-term solution, while innovations are considered as supplements to the existing system or potential contributors "in the long run."

This general outline is discussed more specifically now with reference to the four cases under analysis.

The FM Radio Case

The FM case involves a series of decisions that the Commission has made on frequency modulation radio. The literature on the FCC's decision-making here is limited to case studies that have generally been critical of the Commission's rulings. It has been typically argued that the major influence on the Commission in its FM rulings has been its alleged concern for protecting the major AM broadcasters such as RCA and CBS. For example, according to Krasnow and Longley:

> The FCC was able to prevail largely because its policies favored powerful, well-established broadcasting interests pushing the development of postwar television. The development of FM broadcasting posed a triple threat- to the dominance of established AM stations and networks, to RCA's hopes for quick postwar development of TV and to RCA's patents.[1]

This point has been echoed by Edelman. In his analysis of radio licensing practices from 1927-1947, he concludes that a

> fundamental reason for FM's slow growth has been the opposition of standard broadcast licensees and other vested interests who stand to lose financially by the establishment of a new system of broadcasting.[2]

It has been contended that the FM service was particularly hurt by the FCC decision to shift FM from the original spectrum space assigned to it to a new area in 1945. It has been argued that this decision alone made 400,000 pre-war FM receivers obsolete and is estimated to have necessitated $75 million in expenditures solely for the cost of conversion

to the new spectrum space.[3] It has been viewed also as a source of irreperable harm to the potential for diversified programming present in FM radio since many independent FM broadcasters were forced to sell out their interests to large commercial AM broadcasters due to prohibitive conversion costs.[4] These results are generally linked to pressure from the established radio broadcasting industry.

This interpretation is subjected to critical scrutiny first by discussing the historical context out of which FM radio emanated. Two factors, noted earlier in the general overview, are particularly important here. In the 1930s the Commission increasingly referred to the problems of both the growing centralization of broadcasting power in the major networks and the concentration of radio stations in urban areas with rural residents consequently receiving less service. A context characterized by these problems would lead one to believe that the Commission would have been most receptive to FM, since the latter could provide both more competition through the formation of new networks, as well as added service to rural residents.

The FCC, however, proved to be less than receptive to FM. One important component of my discussion of decisional processes in this case as well as in the others is the problem of the innovation getting on the FCC's agenda. FM was developed by Edwin Armstrong in the early 1930s. After a few years of

tests, Armstrong presented his new radio technique before the Institute of Radio Engineers in 1935. He claimed that

> the conclusion is inescapable that it is technically possible to furnish a broadcast service over the primary areas of the stations of the present-day broadcast system which is very greatly superior to that now rendered by these stations.[5]

While Armstrong's presentation was met with near unanimous approaval, the FCC took little note of FM until late in the decade. In 1935, the FCC's assistant chief engineer played down the possiblity of developing an FM service considering it a "visionary development" that was essentially impractical for current consideration.[6] Nothing in the FCC's Annual Report of 1937, which contained a section entitled "Technical Developments in the Broadcast Art," dealt with FM radio.

Nevertheless, by 1938 the FCC began to recognize the advantages that Armstrong had indicated would accrue from frequency modulation against the then dominant AM service. In its 1938 Annual Report the Commission recognized for the first time the following significant advantages of the FM service:

1. ... a material gain in the effectiveness of reception through static, especially the type of static resulting from nearby thunderstorms and from some types of man-made electrical disturbances.

2. ... the signal-to-noise ratio necessary for satisfactory reception is considerably less than that required for the same reception with a broadcast system employing amplitude modulation.

3. ... good reception at a greater distance

> from the transmitter and a correspondingly larger service area for the same power used at the transmitter.[6A]

Despite this recognition of FM's technical superiority over the AM service, the Commission did not consider authorizing the commercial development of FM. This is surprising given the FCC's expressed concern about problems with the AM service. For example, it earlier claimed that

> The increase in demand for broadcast facilities, the need for local broadcast service in many communities which do not now have local broadcast stations, ... have convinced many in the industry that improvements and changes in allocation could and should be made.[7]

Thus, despite the expressed need on the part of the FCC for an improved broadcasting system and despite its recognition that FM could provide a service superior to that of AM, it was not until 1940 that the Commission authorized the commercial development of FM by assigning it spectrum space.

The possiblity is considered that the FCC's association of broadcasting solely with the AM service made it difficult for FM radio to become a major item on the Commission's agenda of possible modes for dealing with its perceived problems. Contributing to this difficulty was the uniqueness of the FM concept from a technical point of view. As Brinton has noted:

> It contradicted fundamental rules and limitations under which radio engineers and broadcasters had worked since 1900 and which the FCC had taken for granted for years.[8]

Another factor involved was that the attempt to establish FM on the FCC's agenda was made by people who were outside the circle of organizations that had traditionally been involved in broadcasting decision-making. It would have been much easier for FM to have been considered legitimate in the view of the Commission had it been proposed by David Sarnoff rather than by Edwin Armstrong. The basic point that I attempt to make is that from the analytic perspective one would expect that FM would be part of the Commission's agenda of possible solutions. Assuming that all relevant variables are considered, the problem for the analytic theorist is calculating a preference set among possible solutions. On the other hand, the cognitive approach renders the very process of agenda construction as problematic because it involves significant costs such as those derived from investments in prior agendas. Specifically, rather than shift its focus of attention to new possiblities, the Commission searched for solutions to what it considered to be problems with the AM service within that service itself. For example, the Commission's Report on Chain Broadcasting proposed dealing with the problem of monopoly by severing one network from NBC control. Nowhere in the Report is the possiblity of using the FM service to deal with this problem discussed, despite the fact that, as has been noted, three years earlier the FCC had hailed the capabilities of FM for its practically static free signal and superior reception

at greater distances. One can interpret this development as stemming from the Commission's association of major solutions with the established broadcasting service, not so much because it succumbed to pressure from the industry- certainly the FCC received no pressure from the industry to break up NBC- but rather because its cognitive investment in what it appropriately called "standard broadcasting" led it to both view that system as primary and search for solutions within its vicinity.

Another example of the FCC restricting its search to the area of the established system concerns its position on so-called "clear channel" radio stations. The latter are very powerful AM stations whose frequency is not shared by any other station within a large geographical area. This allows for very extensive nighttime coverage for these stations. The Commission spent a great amout of time in attempting to develop a sufficient number of clear channel stations to, as it claimed in 1946,

> provide standard broadcast service to some 21,000,000 Americans who are not now being satisfactorily served ...[9]

Once again the Commission looked for solutions to its problems with the AM service within that same service.

In sum, an attempt is made to show that a first step toward understanding the outcome of the FM case is to understand the difficulties that it had in coming to the center of the Commission's attention.

A second major element of the decisional process is the fact that even when brought to the Commission's attention, it was considered to be a service that could only be secondary to the established system. This does not appear to correspond to the FCC's view.of FM contained in the 1940 report that accompanied its order authorizing FM commercial development:

> Frequency modulation is highly developed. It is ready to move forward on a broad scale and on a full commercial basis. On this point there is complete agreement amongst the engineers of both the manufacturing and the broadcasting industries. A substantial demand for FM transmitting stations for full operation exists today. A comparable public demand for receiving sets is predicted.[10]

At this time the FCC assigned 35 channels to FM in the 43-58 mc range which would be enough for 1500 to 2000 stations. It is important to note, however, that this optimism was tempered by a concern to make certain that FM remain in a supplementary position relative to the established system. Thus, even in 1940 the FCC noted that this

> new and additional service would not supplant the service of standard broadcast stations generally.[11]

Furthermore, the FCC attempted to see to it that the problem of monopoly, which it perceived as a severe detriment to the AM service, would not be repeated with FM. Hence:

> To obviate possible monopoly, and to encourage local initiative, no person or group is permitted to control more than one FM station in the same area, and not more than six in the nation as a whole.[12]

This is an example of the way in which the FCC, even at the time of its greatest enthusiasm for FM, attempted to essentially fight its old battles with the new service. It continued with this approach in 1945- the year that marked perhaps the most significant decision-making on FM.

Two decisions rendered in 1945 are of central importance here. First, in June of 1945 the Commission shifted the spectrum assignment of FM radio from that of the area around 50 mc to that around 100 mc. Second, in August of 1945 it approved of what was called the "single market plan." This lowered the power of FM stations in major urban areas and thereby curtailed attempts to develop an FM network system. Several factors are significant for understanding processes involved in these decisions.

1. The context of these decisions was one characterized by a great amount of complexity. Despite the fact that a freeze was placed upon FM development during the war, there were by 1944 47 stations in operation, 500,000 sets in use, and 400 backlogged applications for station licenses.[13] Thus, in the Commission's 1944 hearings on FM alone, 6000 pages of testimony were received, 650 formal exhibits were presented, and 230 witnesses were heard.[14] In addition, there were a large number of claims made by a number of different parties for spectrum space following general wartime freezes. Aside from AM and FM radio, television and safety service interests were

preeminent among these. There was simply not enough spectrum space available to meet all of these requests and hence there were conflicts among values.

2. The Commission decided to shift the spectrum space orignially assigned to FM despite the opposition of not only FM manufacturers and station owners, but also of its own panel of industry experts (the Radio Technical Planning Board) and RCA. On this issue, the industry was split- RCA opposed the shift and CBS favored it. This point is most significant because it has been claimed by most who have considered the case that the FCC was pressured by AM broadcasting interests to shift FM out of its original spectrum area.

The Radio Technical Planning Board (RTPB) was organized in September of 1943 at the requenst of the FCC Chairman so that the FCC

> might have available the coordinated views of industry respecting radio allocations to the various services.[15]

It was sponsored by 9 industry associations including the Institute of Radio Engineers, the National Association of Broadcasters, and FM Broadcasters, Inc. It was chaired by Dr. W.R.G. Baker of General Electric. The RTPB panel charged with making recommendations for FM radio dealt particularly with the question of whether potential interference might require the shifting of FM from the spectrum area assigned to it in 1940. This concern was raised in November of 1944 by K.A.

Norton, a former FCC engineer. Norton recommended that FM be shifted to avoid what he considered to be a serious potential interference problem in the 50 mc range.[16] Contrary to Norton's recommendation, the RTPB held, by a vote of 19-4, that there was

> no technical evidence to indicate that certain erratic propagation characteristics of the spectrum would be improved by any shift in the present allocation.[17]

Instead, changes were proposed so that the existing FM band would be considerably expanded to permit 75 commercial channels in the range of 41 mc to 56 mc "so assigned that they shall be continuous with and include the present FM band."[18] This position was supported by the RTPB panel on General Spectrum Allocations.[18A]

RCA was among those organizations that opposed the shift of FM to a new spectrum area. It did so at least on three separate occasions. In early 1945 two men from the research divisions of RCA and NBC argued before the Commission that FM should not be moved.[19] RCA also argued against it in two separate briefs filed before the Commission.[20] It basically supported the contentions of the RTPB. On the other hand, CBS supported moving FM to a higher spectrum area. It has been suggested by different analysts of this development that this conflict was connected to the struggle between RCA and CBS over the form that television broadcasting would take. Both Lawrence Lessing in his biography of Armstrong

and Business Week claimed that RCA opposed the shift of FM because it feared that such an action would set a precedent that might be considered grounds for shifting television out of the VHF area and into the ultra-high frequency spectrum area. CBS wanted FM moved, it is claimed, because moving TV to UHF would put CBS on an equal footing with RCA.[21]

The conflict points to two important considerations that are not present in analyses of this case. First, it points to the extent to which broadcasting problems are tightly interconnected with one another. To say, as some have, that FM was hurt because of the power of so-called television interests is to gloss over the fact that there were different forms of television tied to different possible FM outcomes. Perhaps more importantly, the evidence shows that there was no such thing as a unified television interest pressuring the FCC to restrict FM. It is true that CBS tried to curtail FM and it is also true that RCA did not attempt to directly promote the new radio service. However, perhaps because maintaining the status quo in FM meant protecting its television system, RCA opposed CBS and was actually alligned with FM supporters on this issue. The organizational "capture" approach, whether referring to capture by the RTPB or by the industry, does not appear to be useful for dealing withe this issue.

3. In its early 1945 report on frequency modulation the Commission nevertheless expressed deep concern that

> ... 'sporadic E' and 'F2 layer' interference would plague FM in the next few years at its present frequency as the sunspot maximum is approached.[22]

In its final report of June, 1945, the FCC brushed aside statements that any interference, if occurring at all, would be limited to outlying rural areas. The Commission claimed that

> urban as well as rural service will be subject to substantial interference on the lower frequencies.[23]

An analysis of FCC reports on the case indicate that these technical considerations were the primary stated grounds for shifting FM to the 100 mc region. Reflecting back on this decision at 1948 Congressional hearings, Commissioner George Sterling concurred with technical interpretation:

> It was largely in order to avoid interference from sporadic E layer and F2 reflections that the Commission decided that FM broadcasting should be assigned to the 100 megacycle region.[24]

While it is difficult, if not impossible, to determine precisely why a particular decision is taken by an organization, this is the only reason that has been offerred by the Commission to explain its FM actions. The problem with it is that there was only one expert witness who concurred with this position. Following K.A. Norton's appearance before the Commission to testify in favor of the FM shift, seven experts in radio wave propagation contradicted his claims, generally arguing that FM should remain in its position around the 50 mc range.[25]

A final FM decision was delayed until the completion of further testing during the summer of 1945. However, this decision was reached before these tests could be conducted. According to the Commission's interpretation of the case:

> Since the Commission desired to have as much information as possible before it prior to making a decision about the FM band, the Commission announced on May 25 that it would withhold the allocation of FM pending further propagation measurements to be made during the summer of 1945. Subsequently, however the War Production Board advised the Commission that the manufacture of FM, AM and television transmitters and receivers might begin at an earlier date than was originally indicated to the Commission ... Accordingly, the Commission on June 5, 1945 ordered a further argument and hearing in order that a final dicision might be reached at the earliest possible date.[28]

The tests that were considered critical to determining whether FM was to be shifted were thus cancelled and, without further testing, FM was shifted to a new spectrum area.

There are other factors that make this explanation based on technical consideration a difficult one to understand. The space originally granted to FM was in turn given to television. Would not television be subject to the same, if not greater, difficulties due to interference than the FM service? It is claimed that this was understood but that such interference could do no permanent harm to television since television would soon also be moved out of this spectrum area.[27] The television service was, in fact, moved out of the area formerly occupied by FM.[28] The space was finally taken over

by the safety and emergency services (e.g., police, fire, etc.) in the late 1940s. Again, the question might be raised about how emergency services could more appropriately occupy spectrum space that was considered technically unsuited to a leisure service due to interference. Commissioner George Sterling responded to this question in the following way:

> ... the Commission recognized, too, that police operations in the 44-50 megacycle region would be subject to interference. ... operations such as police and fire communications are conducted on an intermittent basis. This in itself diminishes the possiblity of encountering serious interference. Moreover, police and fire department messages, for example, that may not go through because of interference can be repeated many times within a relatively short interval of time. Because of this possiblity of repeating messages the problem of interference is further minimized.[29]

The contention that unless FM were shifted it would be hampered by interference appears to be a case of what Steinbruner has called the "inference of impossiblity." All expert witnesses before the Commission, but one, denied that this would happen. Since FM did not fit into the primary cognitive picture of the FCC, one piece of testimony supportive of that picture is considered to be sufficient to justify its retention, despite all of the contrary testimony.

4. The decision to shift FM is characterized by another component of the cognitive approach- the short-run/ long-run split. Steinbruner argues that when faced with contradictory values, organization tend to deny the contradictions

rather than directly recognize them. One way of denying the contradiction is to split it up into short and long term components. Thus, for example, for the short term, the Commission recognized that there would be problems with uprooting the FM industry and giving its spectrum space to television, but the FCC felt that this would actually prove to be of "long run" benefit to the FM service. In its shift order the Commission stated that it had

> a duty to consider the long range effects of its action as well as the effects during the months immediately ahead, and it does not propose to provide an inferior FM service during the decades to come merely because of the transitory advantages which may be urged for an inferior service.[30]

In an interview conducted after release of the order, Commissioner Jett states that while the area around 50 mc was best for the short run needs of FM, the new area was chosen out of "long term planning" considerations.[31]

5. The single market plan essentially lowered the power and antenna heights of northeast metropolitan stations. For example, the main station of the chief FM network, the Yankee Network, had its power cut by one-third.[32] It was another decision that was characterized by a split among major industry organizations. It was proposed by CBS and opposed by RCA.[33] This once again points to the extent to which it is overly simplistic to view Commission decisions in terms of the response of a captured agency to an industry monolith. Commissioner Sterling of the FCC claimed that the decision was

made to prevent the development of an FM monopoly:

> To permit higher powered FM stations in the highly congested portions in the United States would, of course, greatly reduce the number of assignments that could be made in such areas and would thus tend to foster monopoly in FM broadcasting. The Commission's allocation policies are designed to permit a large number of FM stations to be authorized so that a maximum number of cities and communities may have their own FM stations.[34]

This appears to be evidence once again of the compartmentalization process that is a cognitive mechanism for dealing with a complex situation. The Commission was unable to view the radio service as a totality with FM providing the means to deal with perceived problems in the AM service, such as that of network monopoly. Rather, it separated the services, looking for solutions to its AM problem only in the AM area and seeking solutions to potential FM problems in a similar way. Thus, the single market plan might protect against monopoly developing in FM broadcasting, but would also help to preserve what the Commission considered to be the problem of the concentration of power in AM radio.

This established policy of considering FM as a secondary service continued beyond the 1945 decision-making. This is evidenced by several developments which are now considered.

1. AM owners were encouraged to take over FM stations and duplicate their programming on FM. In 1945 the FCC ruled that AM station owners could buy FM stations but FM owners

could not own more than six FM stations in the nation as a whole and no more than one in a particular community. The Commission also suspended the new chain broadcasting rules for AM owners of FM stations such as those rules applying to option time for affiliates.[35]

A further explicit example of this policy is contained in the Commission's 1947 Annual Report:

> As of March 1, 1947, three-fourths of all FM applications were from standard broadcast interests, and one-third were from newspapers, 23 percent of which were in the standard broadcast field. These groups are in a position to support the new industry until it reaches profitability. Standard broadcasters have an advantage in being permitted thus far, to transmit their programs over their FM facilities.[36]

It has been claimed by some that this policy would be particularly detrimental to FM networks and independents. According to Lessing:

> ... if FM was thrown in free with AM network broadcasting, the independent FM station and FM network would have a difficult time convincing anyone to pay for FM programs, the independents only source of revenue.[37]

As a dumping ground for AM programming, the FM service would not be able to develop into an independent competitive force. On the other hand, it has been argued that by allowing AM station owners to also purchase FM stations and duplicate their programming on these stations, the FM service would actually benefit. Charles Jolliffe, who was at that time executive Vice-President in charge of RCA Laboratories claimed

before a Congressional committee investigating FM in 1948 that such a policy "means so much to the advancement of FM."[38]

The latter argument does have merit when such a policy is considered as a temporary way in which to help a fledgling industry. However, the history of broadcast regulation suggests that most such temporary decisions tend to harden into established policy. It was just such a hardening which made this policy contribute to the perpetuation of FM as a service ancillary to the dominant AM system.[39]

2. Initial attempts to require FM stations to independently program for a small part of the day were dropped and not picked up again until the mid-sixties and this time with a waiver allowance. The Commission required FM stations to develop their own programming for 2 hours per day when it first authorized commercial FM development in 1940. It rescinded this order in 1945. In his dissenting statement to this decision Commissioner C.J. Durr expressed a strong concern for what this ruling might do to the chances for establishing an independent FM service:

> Because of the failure of the Commission to require any independent programming of FM stations, I am very much afraid that many FM licensees who are now operating FM licenses primarily as insurance policies protecting their AM operations against the risks of technological development, with the result that, for several years at least, the listening public will receive little more than the same program traffic carried over improved highways. ... the use of two

> radio channels for only one program service is not only a waste of frequencies but will retard the development of FM broadcasting.[40]

Nevertheless, this policy, like so many others, initially developed to aid a developing industry, became established over time and contributed to the maintenance of that industry in an inferior position relative to the dominant radio service. The Commission slowly began to change this policy but the ensuing furor from FM station owners (most of whom also owned AM stations and used FM as a duplication source) led the Commission to institute a waiver procedure for many stations to ease the problem of FM program development.[41]

3. AM stations continued to be "dropped in" despite constant references to overcrowding in the AM area. In 1949 the Commission noted that

> Standard (AM) broadcast authorizations climbed to nearly 2200. However, fewer AM stations were authorized than in 1948. Greater difficulty was experienced in wedging into this now very saturated band.[42]

Despite this difficulty, the FCC continued its policy of dropping in AM stations by reducing channel separation distances as well as by extending what it called the "standard" broadcast band from 550 to 540 kc.[43] It continued this policy of "drop ins" well into the 1950s despite the consistent decline of the FM industry.[44] It was not until 1970 that the Commission stated that it would consider the FM service before issuing further AM licenses:

> In.determining whether a given area now receives service, FM as well as AM signals would be taken into account, and an AM application would not be accepted if an FM channel is available in the community.[45]

4. FM was "helped" by the FCC as a secondary service by encouraging the use of FM for background "functional" music through multiplex operations under Subsidiary Communications Authorizations. These were essentially nonbroadcast permits which allowed FM station owners to, in addition, program background music for stores, professional offices, etc. in order, in the Commission's words, "to enable commercial FM broadcasters to obtain additional revenue."[46] This was later cited as a chief reason for what the Commission considered to be a "renewed interest in commercial FM."[47] While this was to some extent true of several FM stations, it did not apply to those FM stations that were independent of control by AM interests. These have continued to show considerable losses. We turn now to a more specific discussion of this trend.

The FCC initially expressed optimism about the FM service just after it shifted FM to a higher spectrum area. It saw little delay in the development of FM:

> At the earlier hearings, some contended that FM might be delayed for two years or even longer if FM were assigned to the higher frequencies. At the time of the oral argument, June 22-23, 1945, the estimates of delay were reduced to four months, It may well be that competition will markedly reduce even this four-month estimate.[48]

This optimism turned in 1948 to a concern about a leveling

off of the number of FM applicants and one year later to the recognition that FM was on the decline.[49] From 1949 to 1957 the number of licensed FM stations was as follows:

YEAR	TOTAL FM LICENSED STATIONS
1949	377
1950	493
1951	534
1952	582
1953	551
1954	529
1955	525
1956	519
1957	519
1958	526[50]

While the number of stations did grow considerably after 1958, reaching 2000 by 1970, much of this growth was due to the proliferation of Subsidiary Communications Authorizations and the increased ownership of FM stations by AM interests. While the number of FM independent stations has increased, so too have the losses sustained by these stations:

YEAR	NUMBER OF INDEPENDENT FM STATIONS	PRE-TAX INCOME LOSSES IN MILLIONS OF DOLLARS
1956	51	0.4
1957	67	0.5
1958	93	0.7
1959	148	1.6

YEAR	NUMBER OF INDEPENDENT FM STATIONS	PRE-TAX INCOME LOSSES IN MILLIONS OF DOLLARS
1960	218	2.4
1961	249	2.6
1962	279	3.2
1963	294	3.2
1964	306	3.0
1965	338	3.3
1966	381	3.3
1967	405	4.2
1968	433	3.9
1969	442	5.5
1970	464	6.2
1971	529	9.0[51]

In 1945 the FCC forecast

> the possile establishement of several thousand FM stations within a few years after the war, or several times the number of standard broadcast stations now in operation.[52]

The fact that this did not occur is best explained by applying a cognitive conception of organizational activity to the response of the FCC to innovations into the broadcasting market.

Ultra-High Frequency Television

There might appear to be a significant difference between FCC decision-making on FM radio and that on television broadcasting. In the former case, the Commission decided to shift FM out of its initially allocated spectrum area because of potential interference problems, while in the latter, it refused to shift television out of its VHF spectrum area despite what was recognized to be an established interference problem. Despite the difference, both are rooted in a common decision-making process. It is one that has characterized the FCC's response to innovations into the broadcasting market and is explored here with reference to the Commission's television station allocation policy.

While the literature in this area is somewhat more extensive than that on the FM case, one finds considerable agreement that in the UHF-VHF case, it was the failure of the FCC to shift an assigned spectrum area that contributed to the restriction of a source of broadcast diversification. In particular, it has been argued that it was the decision on the part of the FCC to allow VHF stations to retain the allocations granted to them before the television "freeze" of 1948 that has severely limited the development of UHF stations.[1] For example, Moore has claimed that the broadcast station allocation policy has been the "most damaging error" that the FCC has committed.[2] Lewis has argued just as strongly that

> The present system sets up dozens of UHF channels nobody wants and so few VHF channels that there has inevitably been destructive competition for them. It is, as FCC member Frederick W. Ford said recently, a "second-class television system."[3]

Noll, Peck, and McGowan have concentrated on the FCC's standard of localism as being particularly prominent in this area of decision-making. According to them:

> If history could be rewritten so that the FCC had set localism aside and created a nationwide broadcasting system ... estimates indicate that it would have been more profitable and less costly to the economy than the present system of local stations. And viewers would have six rather than three networks to choose among.[4]

However, the influence of Congress and the VHF broadcasters has been considered more important in subsequent decisions on UHF that culminated in the All-Channel Receiver Act of 1962.[5] Claims have been made since 1949, with some recent exceptions,[6] that the FCC's decision-making has relegated UHF to a position that is decidedly secondary to the VHF system.[7] As in the FM case, the literature largely follows the organizational context approach with some concern about the Commission's "failure of analysis."[8] Thus, studies of television station allocation have largely been based on evaluating the FCC from analytic assumptions.

Contrary to claims that have been made to the effect that the Commission succumbed to industry pressure in its UHF-VHF decision-making, once again, as in the FM case, there

was a significant split within the industry on the subject. CBS tried to win approval for an all-UHF television system that would immediately adopt its color technique. RCA, on the other hand, argued for either an all-VHF or a mixed system with a delay in the adoption of color standards.[9]

Again, as in the FM case, it has been claimed that it took a needlessly long time for television to reach a central position in the FCC's agenda.[10] From the cognitive point of view, this can be understood by the fact that for many years that agenda was filled with complex issues relating to the radio industry. It would have involved serious costs for the Commission to have shifted its time to a new service that was frought with uncertainty. Furthermore, there would be costs connected with the reassessment of its agenda should an early commitment by the FCC to a television system prove to be an investment in an already obsolete system. The Commission's Television Committee noted as early as 1939 that an early commitment to a particular television system

> may result in a high rate of obsolescence of equipment purchased by the public which may not be able to receive signals from a station that may have different standards from those now in use, or from stations employing standards which may be considerably better than those now in use or proposed to be used. ... As a result of these two factors, considerable patience, caution, and understanding must be used at this time.[11]

The Commission eventually succumbed to a general demand for some television service and since television in the

VHF band was first to develop technically, it appeared on the FCC's agenda prior to UHF. However, the FCC considered this to be a temporary solution since

> there is insufficient spectrum space below 300 mc (the VHF area) to make possible a truly nation-wide and competitive television system.[12]

Therefore, it was felt that the television service

> must find its lodging higher up in the spectrum (in the UHF area) where more space exists and where color and superior monochrome pictures can be developed through the use of wider channels.[13]

An added reason why it was considered necessary to shift to UHF in the long run was because the VHF service was found to be diminished by sky-wave interference.[14]

Once again, however, despite assertions that this was to be only a temporary commitment, VHF rapidly became the established primary television system in the Commission's view. This was not because of unified industry pressure- CBS continued to try to establish an all-UHF system- but because once the VHF service was established, it became the system relative to which all other systems were judged. Thus, by 1947, the television service was split into two components linked to short and long term possiblities. For the short run, a VHF black and white system was authorized while a UHF service with or without color was put off as a long run possibility.

The FCC's recognition that the VHF spectrum area was insufficient to produce a nationwide service without

interference proved to be correct as continuous "shoehorning" of VHF stations led to chaos reminiscent of the early unregulated days of radio.[15] It eventually led to a four year halt to new station licensing- the so-called "television freeze" while the FCC reevaluated its allocation procedure.[16] However, public demand for television continued to rise during the years of the freeze. There were 15 million receivers in 1952 as compared to 1 million in 1948. This increased demand combined with the scarcity resulting from the freeze increased the value of operating VHF stations considerably and therefore made it increasingly difficult to consider shifting all television to the UHF area. Thus, the very mechanism used by the FCC to reevaluate its agenda- the television freeze- severely constrained the kinds of possiblities that could be incorporated into a revised agenda.

The result was that in 1952 the FCC merely reaffirmed the short run/long run policy that it had earlier accepted by approving a mixed UHF-VHF system.[17] This was done despite the realization that UHF would operate at a great disadvantage in the sort run, particularly because few receivers capable of obtaining UHF signals were being produced. The Commission exhibited a sense of optimism strikingly similar to that shown in the FM case. It argued with regard to the former that

> there is no reason to believe that American science will not produce the equipment necessary for the fullest development of the UHF.[18]

In its Annual Report for 1952 the Commission considered the successful development of UHF to be a certainty:

> Of particular significance was the sudden surge of interest in UHF television. Manufacturers of transmitters announced that suitable equipment would be available and receiver manufacturers demonstrated that they had solved the problem of UHF reception.[19]

Thus the Commission, particularly in its Sixth Report and Order of 1952, concentrated on the "long-term" view that UHF will satisfy the demand for a national television service.[20]

Despite the similarity between the ways in which the Commission approached UHF and FM, the Commission attempted to disassociate UHF from FM, which was, in 1952, in the process of severe decline:

> The UHF is not faced, as was FM, with a fully matured competing service. In many cases UHF will carry the complete burden of providing television service, while in other areas it will be essential for providing competitive service.[21]

The short run/long run split was reaffirmed again in the mid-1950s Specifically, in 1956, with the inadequacy of VHF becoming all the more clear and with UHF failing to develop in the way that the Commission had anticipated, the FCC further reduced the already tight mileage separations between VHF stations to allow further VHF "drop-ins." This was considered to be a short term solution with a move to an all-UHF system considered the long range goal. According to the Commission:

> ... as an intermediate measure, its minimum city-to-city mileage separation requirements for channel assignments should be relaxed in order to permit new VHF assignments in appropriate instances at shorter mileage spacings between cities than required by the present rules ...[22]

However, for the future, the Commission argued that

> While ... it would be premature to adopt final conclusions concerning the feasiblity of ultimately shifting all or a major portion of VHF operations to the UHF band, it determined that this proposal was the only one of the many it considered which gave promise of achieving, through the operation of the allocation processes, the long-range goal.[23]

This argument was repeated into the early sixties.[24] It appears that the Commission ignored the real conflict between continued attempts to create more VHF outlets and the expressed need for an all-UHF system. Doing the former would obviously (from an analytical perspective, at least) make accomplishing the latter all the more difficult.

The following are further important considerations that enter into my discussion of UHF as a secondary service in the FCC's view, not so much because of external pressure (though such pressure has existed, it has rarely been concentrated on one side of an issue) but because of the Commission's conception of VHF stations as the primary components of television broadcasting.

1. Deintermixture

It has been claimed that the FCC's concern for UHF was evidenced by the Commission's proposals to establish at

least selective all UHF markets (i.e., to deintermix UHF-VHF markets).[25] In actuality, this was proposed by CBS as well as by several government officials through the fifties. As early as 1951 CBS proposed deintermixture for the Chicago, Boston, and San Francisco markets and, in addition, warned that UHF would fail if the FCC forced such stations to compete with VHF outlets.[26] In the mid-fifties it was proposed by both the DuMont network[27] as well as by the staff of the Senate Commerce Committee.[28] In a widely circulated memorandum produced by the majority counsel of that Committeèe it.was contended that

> the importance of preserving UHF at this time is great enough to warrant Commission approval of deintermixture petitions even though some applicants may have spent money in prosecuting their applications up to that point.[29]

The Commission's position on deintermixture came under criticism in this report because, of several cases in which formal deintermixture proposals were presented to the FCC,

> all but one have been summarily denied without a hearing on the ground that the VHF applicants have already expended large sums of money in prosecuting their applications ...[30]

Thus, deintermixture was generally rejected by the Commission for the harm that it felt would be done not only to established VHF stations which would be relocated, but also to VHF applicants who had invested time and money in attempting to acquire stations.

2. Satellites

The FCC proposed to license stations strictly for the purpose of rebroadcasting the programming of television stations and thereby increasing those stations' audience and revenue.[31] This was considered to be a potential source of growth for UHF outlets and while some such stations did develop, most were used to rebroadcast VHF programming. Of 19 such satellite stations in operation by mid-1957, 14 were rebroadcasting for VHF stations and 5 for UHF stations.[32] In 1956, an organization representing UHF stations actually called upon the FCC to discontinue the policy because it would "prove disastrously injurious to independent UHF operations" since they would have to deal with the additional problem of having to compete with VHF satellite stations.[33]

3. Station Ownership Rule

In an effort to promote UHF station ownership, the FCC increased the number of television stations that it would allow one owner to hold to seven, provided that two were UHF stations. This did not directly assist the development of an independent UHF system, but did help some failing stations to survive as adjuncts to VHF stations. In fact, the assistance to the latter was often short-lived. For example, all of the UHF stations that were purchased by NBC and CBS in the mid-1950s were dropped by 1959.

4. VHF Drop-Ins

The FCC continued to try to both increase the amount of VHF spectrum space available for television, as well as squeeze in more VHF stations by reducing channel separation distances. The Commission attempted to obtain spectrum space initially allotted to the Defense Department and was rebuffed by the Office of Defense Mobilization in 1956 and 1960.[34] VHF "drop-ins" continued as a "temporary" or short run solution into the early sixties.

5. All-Channel Receivers

It has been claimed that the FCC sought to establish a law requiring the manufacturing of tlevision sets that would be capable of receiving all VHF and UHF channels.[35] While this is true, the Commission did not meet with a great deal of opposition on this issue. It was proposed by the House Judiciary Committee several times in the 1950s.[36] It received practically the unanimous support of the television industry. The result was that the Commission enthusiastically considered the development of all-channel receivers to be the "long-term solution" and dropped all consideration of a total or partial shift of television to the UHF spectrum area.[37]

In sum, while the Commission did seek to develop the UHF service, it did not make a serious effort to promote it into a primary position. This has not resulted so much from the pressure of external organizations on the FCC. On

most issues there was significant disagreement among many industry organizations such as the major networks. On many occasions, the latter were more in favor of UHF development than was the FCC. It appears that as in the AM-FM case, the Commission viewed VHF as the primary television service because it was the first one that was promoted by the Commission and considered UHF relative to that established system. This has resulted in UHF becoming, at best, an ancillary service.

It did not take long for evidence of the latter point to appear. Of 81 stations that went off the air in 1954, 69 were UHF stations and of 7 station authorizations cancelled, 6 belonged to UHF interests.[38] The Commission, however, did not see itself as being responsible for this problem. According to Commissioner Sterling:

> I do not believe that the Commission can be blamed for those who display bad business judgement in trying to move in on the UHF channels without making a thorough assessment of the availability of equipment both for receiving and transmitting as well as the economic factors which they might be confronted with in the communities in which they propose to establish service.[39]

By 1955, over 100 UHF operations had been cancelled and a Congressional staff report labeled the UHF service an "economic blight."[40] It was feared that "UHF may well go the way of FM." With only one-third of the 325 UHF grants actually turned into operating stations, the Commission considered the UHF situation in 1955 to be a "citical" one.[41] Its conception of this critical

problem is perhaps even more interesting. For the FCC considered it to be a "failure of UHF stations to become integrated with established VHF stations."[42] The problem was not the failure of UHF to become an independent source of programming, but rather its failure to complement the VHF system. Also interesting is the fact that the FCC linked this problem to economic difficulties rather than to the way in which the Commission itself had structured the industry:

> To an appreciable extent these problems are basically economic and arise out of the inability, at the present stage of TV development, to obtain sufficient economic support to meet the high costs of construction, programming and operation of stations.[43]

It was not until 1958 that the Commission recognized "the headstart by the VHF system" as a primary factor in the inability of UHF stations to develop.[44]

That inability to develop continued through the sixties. In 1962, the year in which the All-Channel Receiver Act was passed, there were 1537 channel assignments available for UHF stations and 683 available for VHF. Of the 1537 reserved for UHF only 104 were operating stations and 100 more that had once been operating, had subsequently gone off the air. Of the 683 potential VHF stations, 508 were on the air and generating substantially greater revenue than operating UHF stations.[45] The picture did not improve even with a sharp increase in the number of sets capable of receiving both UHF and VHF. According to 1967 Commission data:

> The UHF stations as a group reported losses of $7.4 million compared with only $0.2 million of losses last year and profits of $2.7 million in 1964, largely reflecting the entry of new independent UHF stations but the total expenses for all UHF stations increased by 35 percent. Profitable operations were reported by 87 percent of the VHF stations- the same as last year- and by 59 percent of the UHF stations, compared to 66 percent in 1965.[46]

Few of these profit-making UHF stations were independent operations. In the next year, the percent of profitable UHF stations declined again from 59 to 42 percent[47] and in the following year only 2 of 37 independent UHF operations showed a profit.[48] By 1971 31.5 per cent of UHF stations reported profits (as compared to 80.8 per cent for VHF) and only 6 of 48 independent UHF operations reported profits in that year.[49]

It thus appears that even with an increase in the available sources for receiving UHF programming, the service continues to have a difficult time establishing itself as a serious competitor to the VHF system. This should not be surprising, however, considering the extent to which the Commission has sought to protect its initial promotion of VHF.

Cable Television

The third case that is subject to comparative analysis involves cable television. Major decision-making involving cable dates from the late fifties and continues to this day. In 1959, the FCC declined to assume regulatory authority over cable television in a case that involved CATV access to microwave facilities.[1] This decision was reversed, however, in 1962 when the Commission decided to assert jurisdiction over CATV microwave suppliers.[2] This determination to take on regulatory responsibility for CATV systems was formalized in the FCC's First Report and Order issued in 1965.[3] Specific rules, particularly regarding the carriage of broadcast signals by CATV systems, were outlined in the 1966 Second Report and Order.[4] Finally, in 1972, the Commission issued its Cable Television Report and Order[5]- the statement of its policy for CATV.

While a few analyses of cable television have been comparative,[6] much of the literature involves single case studies. A good number of these have been attempts to assess the future potential of cable television as a means of providing a number of diverse communications functions.[7] As far as the regulation of cable is concerned, there have been some attempts to assess the impact of the FCC's standard of localism on the development of CATV.[8] For example, it has been argued that

> Since these community systems, like clear channel and network services before them, would perform a function of program delivery not related to that objective (i.e., localism), they could be viewed at best as an extraneous element in the broadcast structure.[9]

Others have concentrated on the alleged role of the major commercial broadcasters in influencing the FCC to supposedly restrict the development of cable into an ancillary position in the broadcasting market, particularly in those markets with the greatest population density. Much of this work echoes the claim of Smith that

> the Commission has defined the public interest as the perpetuation of the over-the-air television industry as it now exists.[10]

There has also been an interesting analysis of the influence that the Cable Television Bureau staff at the FCC exerts on Commission rulings in order to promote the development of CATV.[11]

In general, the FCC has been criticized for having failed to comprehensively analyze the long-range potential of cable television, both shortly after it had begun to grow and as it began to become a major market force. For example, according to Le Duc:

> Neither the FCC's apparent lack of authority nor the necessity for immediate action appears to excuse the absence of a comprehensive analysis of cable television.[11A]

Thus, as in the other cases, the Commission's actions have been judged according to analytic assumptions. It is my contention that it is not necessary to adopt such assumptions in

order to explain the FCC's actions on CATV and the other innovations. One can explain such "failures of analysis" without reverting to what Noll considers the two dominant explantions: "error by design" (because of industry capture) or "error by incompetence" (because of a lack of expertise).[12] As in the other cases, an attempt is made to show that this behavior can best be understood by considering the cognitive perspective. The cognitive approach suggests factors that have been generally ignored in the emphasis that has been placed upon the supposed control of FCC decision-making by outside interests and/or the incompetence of its members. I explore the extent to which this perspective provides a means to understand both the length of time that it took for cable to find a place on the Commission's agenda, as well as the actual place that cable took once it was considered as an agenda item. The following are the key factors that enter into my comparative analysis of the cable television case.

1. It is significant that cable began merely as a service that could enhance the quality of television signals for communities lying on the fringes of broadcast contours. It was as one among several ancillary services that cable first established itself before the Commission. A 1958 FCC analysis strikingly points to this fact. CATV was considered along with satellite stations, translators, and boosters as auxiliary services whose "economic impact" on the established broadcasting

service was to be considered by the Commission.[13] Given the complexity of the FCC's work in attempting to establish a nationwide broadcast service throughout the fifties, it was easier and cheaper for it to link cable to these other auxiliary services rather than to consider cable as a potential competitive challenger to the major broadcast service.

2. Contributing to the consideration of CATV as solely an auxiliary service is the fact that cable could not be fit into the Commission's conception of a proper national television broadcasting system, i.e., one characterized by a multiplicity of local stations responsive to local community needs. In fact, cable could be looked on as a threat to that conception particularly when it was recognized that cable operators could import distant signals into local markets and lower the audience sizes of local outlets. In 1959 the Commission expressed its concern that CATV would drive local stations out of business and would thus eliminate service for rural residents who were dependent on local broadcast stations for service and who were out of the range of economic feasibility for the cable service.[14] This concern was reiterated in 1962:

> the Commission has become increasingly concerned over the impact of CATV operations to the survival or growth of local TV outlets and services. This concern prompted it, in 1958, to inquire into the impact of CATVs and other adjuncts upon the development of TV broadcasting.[15]

Thus, cable could be looked upon as ancillary because it could

not be fit into the established conception of the "correct" television system. It was this concern that led the Commission to assert jurisdiction over cable systems that imported distant signals through microwave facilities.[16]

3. A further factor reinforcing this view is that cable could easily be looked upon as a temporary aberration providing service until such time as a national broadcasting system could be established. Since it was felt that it would be only a matter of a few years before the VHF-UHF system became fully developed, it was not necessary for the Commission to spend its time concerning itself with cable any more than to make certain that it would not threaten the full development of the broadcasting system.

4. The idea that the Commission believed that it was not necessary to spend its time on cable regulation is an important one to consider. Under the assumptions of various rational actor approaches, time is typically treated as infinitely available rather than aa a major constraint. In the case of CATV one can argue that the Commission felt that it was not worth the cost in time that could be spent on what it considered the primary television system. This was in fact discussed by the Commission on several occasions in the late fifties. It helps to explain why in 1959 and thereafter the Commission opposed Congressional attempts to require the licensing of CATV systems and simply sought to make cable operators get

retransmission consent from originating broadcasting stations.[17] The FCC sought to avoid the administrative burden of directly regulating another industry. For example, in 1958 the Commission claimed that it could not assert common carrier control over CATV because

> assertion of jurisdiction would require the regulation of rates and services of several hundred CATV systems. It would entail an administrative burden which the Commission is not equipped to handle.[18]

5. Another factor that is important for understanding the way in which the Commission dealt with CATV is the inability of the FCC to fit cable within either of its major communications categories. It was considered neither a common carrier nor a form of broadcasting. This was discussed by Commissioner Doerfer as early as 1955.[19] It was used as a reason by the Commission for its refusal to assert direct regulatory control over CATV in 1958.[20] and again in 1959.[21] Specifically, the FCC argued that cable could not be considered to be a common carrier service because the subscriber did not determine the signal that was carried, nor could it be considered a form of broadcasting because it involved transmission by wire.[22] This argument was again used to justify the refusal of the FCC to license cable systems in 1965:

> CATV operation is not regarded as broadcasting because it does not transmit to its audience over the air. Nor can it be technically called pay-TV since the programs it picks up are broadcast free by the originating TV stations. And the Commission has held that it is not a

> common carrier within the meaning of the Communications Act. Consequently, CATV is in the category of wired radio and TV operations which do not now require Commission licensing.[23]

Thus, as a hybrid, it would be much easier for the Commission to regard CATV at best as ancillary to the established system rather than reorient its fundamental communications schema.

The FCC did not become significantly involved in cable decision-making until CATV began to develop into a potential competitor to broadcast television, until it could not get Congress to pass a tough retransmission consent law, and not until the Courts rejected the contention that CATV operations were required to make copyright payments for its programming. Le Duc has pointed to the irony of the first point:

> In essence, then, if cable appeared to be coming of age in 1964, it was also emerging from the obscurity which had protected it in the past from the full force of the broadcast industry's challenge.[24]

As the mid-sixties approached, cable operators began to consider more than the upgrading of broadcast signals in rural communities. The importation of signals from distant markets was turned to as a way to expand the cable industry. CATV would now hold out the promise of not only better service, but also additional programming.

> The Commission became increasingly concerned about the problems posed for free TV- especially the development of UHF broadcast service- by the mushrooming growth of CATV systems.[25]

It argued that the

> CATV service should be supplementary to and not cripple the local TV broadcast service or impede the growth of TV broadcasting.[26]

The Commission's involvement was largely based upon its historical conception of how a television broadcasting system should be structured as well as by its established conception of cable as an ancillary service. As with the other innovations discussed, the FCC did not consider revamping these conceptions in the light of changing developments in CATV's potential, rather, it judged cable in terms of the economic impact that it might have on the established broadcasting system.

The Commission did not become directly concerned with regulating CATV until it recognized that Congress and the Courts would not control the development of cable. In the early and mid-sixties attempts to establish laws to regulate cable failed in the Congress. In 1964 the Ninth Circuit Court ruled in the case of Cable Vision Inc. v. KUTV Inc. that cable systems did not compete unfairly with broadcasters.[27] Thus, in 1965 the Commission assumed jurisdiction over all cable systems, not merely those served by interstate microwave common carriers.[28]

In its First Report and Order the Commission claimed the need to regulate CATV despite the fact that analysis "did not furnish the tools" to measure the alleged damage that cable television was inflicting or could inflict on the broadcasting system. For

> unless we were convinced that the impact of CATV competition upon the broadcasting service would be negligible, we would favor some restrictions as a potential equalization of the conditions under which CATV and the broadcast service compete ... It would be clearly contrary to public interest to defer action until a serious loss of existing and potential service has already occurred.[29]

The Commission made its licensing of cable relay stations conditioned upon the agreement of cable operators to carry each broadcast station within 60 miles of the cable system upon the request of that broadcast station. The Commission also prohibited the duplication of programming by the cable system for a period of 15 days before or after its showing by a local station. Thus, given the complexity of its task and the perceived time constraint, the Commission shifted its earlier position on CATV, despite its recognition that it did not have the analytic tools to justify its actions. Summarizing this position Commission Chairman Henry explained:

> that policy is to promote CATV as a supplementary service but not to place primary reliance upon it because of its practical shortcomings, namely, no rural coverage, service only for a fee and no outlet for local expression.[30]

This position was not one taken with complete unanimon the part of the Commission. The dissenting views of Commissioner Loevinger are particularly interesting because they provide us with the analytic alternative to the FCC majority opinion. According to Loevinger:

> What I regard as a basic error in the FCC approach is that it is negative and restrictive rather than positive and expansive. It assumes that limitations and restraints upon one mode of transmitting programs will necessarily benefit other modes. I think the objective should be to encourage the expansion of service ... and this is what the Congress has told us to do.[31]

Arguing from an analytic perspective, Loevinger sees CATV and broadcasting as components of a total system of communications, while the Commission majority basically accepted the established broadcasting service as the primary system that was to be protected from CATV.

This protection was established further in 1966 with the Second Report and Order which basically stopped the importation of distant broadcast signals by CATV operators in the top 100 markets without a Commission hearing.[32] The Report claims that this would protect local broadcast stations in general and particularly UHF outlets. It has been challenged by several reports in which it has been argued that:

1. The actual beneficiaries would be major market VHF stations.[33]

2. CATV would assist UHF development by giving the latter a place on the dial comparable to that of VHF stations.[34]

3. In attempting to protect the local broadcast service, the Commission actually encouraged the control of cable companies by large corporations because the rules put CATV in such a difficult economic situation that only large

companies could absorb the losses that would be incurred by major-market operations during the period of the Commission's restrictive CATV policy.[35]

An important point about this decison that has not been considered by the critics, however, is the fact that it enabled the Commission to control CATV systems without involving itself in the day-to-day regulation of CATV. The burden of proof was placed upon CATV systems in the top 100 markets and on local stations outside of these 100 markets.

Aside from conceiving of CATV as an economic threat, the Commission generally sought to avoid the conflict between cable and broadcasting by splitting the two into short and long term possiblities. For example, in the 1968 ruling in which the Commission required CATV systems in the top 100 markets to obtain retransmission consent and thus eliminate much of the daily administrative work on CATV, it argued that this form of protection for over-the-air broadcasting was an interim measure and that in the "long run" cable would develop along with broadcasting as a major communications system.[36] This arguement, made as well for FM and UHF, is typical of what Steinbruner has called the "wishful thinking" mode that is a characteristic conflict-avoidance mechanism that is prominent among organizations operating in the context of structured complexity.

It could perhaps be argued better in the case of

cable than in the others that have been considered, that industry pressure played a significant part in the Commission's decision-making process. However, it is important to recognize that there were significant differences within the broadcasting industry in regard to cable. These positions changed in the course of CATV's development. In the early years of cable television, it was only small broadcasting stations which were opposed to the development of cable. It was only with the recent expansion of CATV systems into major markets that owners of large broadcasting stations began to express their opposition. Many of these station owners, however, decided to join rather than oppose the CATV industry by investing in cable systems. Thus, by mid-1973 broadcasters owned 37% of all CATV systems.[37] Even in this case, it is difficult to argue that it was solely an industry monolith which pressured the FCC to keep down cable development.

In sum, I consider it important to consider such characteristics as the historically established conception of a broadcasting system that was developed by the FCC as well as the complexity of its regulatory task as significant factors in contributing to the outcome that cable developed into a service ancillary to the dominant over-the-air broadcasting system. This is well indicated by research on the current state of the cable industry alone[38] as well as that relative to the broadcasting industry.[39] The following data on cable

system penetration particularly highlight the current secondary position of CATV. Particularly noteworthy is the decline in the rate of subscriber penetration:[40]

YEAR	TOTAL SUBSCRIBERS (in thousands)	PERCENT INCREASE
1952	14	---
1953	30	114.3
1954	55	116.7
1955	150	130.8
1956	300	100.0
1957	350	16.7
1958	450	28.6
1959	550	22.2
1960	650	18.2
1961	725	13.1
1962	850	17.2
1963	950	11.8
1964	1085	14.2
1965	1275	17.5
1966	1575	23.5
1967	2100	33.3
1968	2800	33.3
1969	3600	28.5
1970	4500	40.0
1971	5300	17.7
1972	6000	13.2

The Subscription Television Case

The fourth and final case for this comparative analysis deals with subscription television or "Pay TV" as it is popularly known. Subscription television involves the transmission of programs to viewers on an individual demand basis, i.e., viewers are charged for each program that is selected. The initial STV system was developed by Zenith in the 1940s and commercial experimentation began in Hartford, Connecticut in 1962. Following the completion of these tests in 1968, the FCC issued its Fouth Report and Order establishing guidelines for the operation of STV.[1]

A good deal of the literature on STV has focused on the efforts of major commercial broadcasters and movie theatre interests to exert pressure on the Commission to limit the development of STV. Most have argued that these efforts have been successful. According to Borchardt,

> After weighing the arguments for and against over-the-air pay-TV, the commission rules sought to protect advertiser-supported commercial TV by prohibiting pay-TV operators from showing those sport, film, and series type programs which constitute the main programs of the former.[2]

R.H. Coase has been more explicit:

> The reason for the lack of development is that the commercial broadcasting industry and the owners of movie theatres have been successful in exerting sufficient political pressure to prevent the emergence of a pay-TV system.[3]

Moore[4] and Chester[5] have concurred with this interpretation and while Barrett has agreed with it also, he tempers his concurrence with the belief that even if STV were to develop free from external pressure, it would tend to mirror the current system of mass entertainment because so-called "minority" programming would not be profitable enough to support the system.[6] The latter point is supported by Noll and his associates.[7] They conclude that

> Over-the-air STV is, then a paper tiger of a threat to commercial television. ... The importance of over-the-air STV is surely going to be small as long as regulaion reserves a large number of channels for free TV.[8]

Despite the emphasis on organizational pressure in the literature, the cognitive perspective is again most useful in helping one to understand the decision-making process in the subscription television case. Once again, an important characteristic is the amount of time that it took for STV to come to the Commission's attention as an agenda item worthy of consideration. The concept of viewer payments for individual programs was initially suggested by Eugene McDonald of Zenith in 1931 as a possible source of financing the radio broadcasting system without advertising.[9] It was first formally proposed by Zenith in 1947 with its Phonevision system. It was not until three years later that tests were authorized and some experimentation took place in the Chicago area. The system was limited to showing movies that were more than two years old.[10]

Zenith sought approval for commercial STV operations from the FCC in 1952. At that time, however, subscription television was a very minor concern of the FCC, considering the fact that it was mired in the complexities of attempting to establish a national television broadcasting system. In addition to this and reminiscent of the cable case, the Commission was in a quandary as to whether to consider STV as a broadcasting or common carrier service.[11] It further questioned whether it would be useful to reserve part of already very scarce spectrum space for the new service.[12] The Commission therefore delayed a proposed rulemaking until 1955.

With STV on the agenda, the FCC treated it as the Commission did other innovations- relative to the established broadcasting system. Its chief concern as it constantly repeated was to safeguard the "standard broadcast" or "free TV" service. As early as 1955 the Commission felt it necessary to consider

> ... what safeguards are necessary to insure that the public would continue to receive well-balanced TV programming without charge;[13]

In addition to this, the tremendous number of filings in response to the FCC's proposal increased the complexity of its task. According to the Commission:

> Filings in this connection have been more voluminous than in any previous docket case in the Commission's history, with more than 25,000 formal documents, letters, postcards, etc., filling nearly 70 reference volumes.[14]

Because of these considerations, the Commission decided to further delay its decision-making on STV and ordered new demonstrations.[15] However, in the process of seeking these new tests, the Commission made it clear that it had complete jurisdiction over STV.[16]

Perhaps the most significant development between 1955 and 1959 on STV was the fact that the original test proposals were significantly narrowed. The FCC initially sought to test competing systems in the same market and the same STV system in different markets.[17] The actual trial conditions were limited to one system (Zenith-Teco) in one market (Hartford, Connecticut).[18] The actual test does appear to indicate that perhaps given the complexity of its other concerns, the FCC simply did not seriously consider subscription television as a service with significant broadcasting potential. It also may indicate that what was actually important from the cognitive point of view was <u>that</u> a test be taken rather than what the test could actually show. The testing was to a great extent a symbolic activity, for the results, as long as they did not yield extreme values, would be interpreted as conforming to the established conception of primacy for the dominant broadcasting system with an ancillary role for the innovation.

Attempts to expand the tests to a greater number of markets and the programming for a greater part of the day

were made by Zenith in 1965 but were turned down by the Commission.[19] In the next year Zenith proposed the establishment of a nationwide commercial STV system and in March the Commission responded with a Notice of Proposed Rulemaking. In 1967 the FCC's Committee on Subscription Television supported the development of a restricted national system.[20] Nevertheless, Commission Chairman Rosel Hyde continued to argue before the House Commerce Committee that despite the years of testimony and study, the FCC was still undecided on STV:

> In sum, this proceeding has been formally pending for more than 12 years. ... I want to stress that the Commission has reached no decision on this question. In conclusion, may I emphasize again that there has been no resolution of the issues which have been argued so extensively before us.[21]

It was not until 1968 that the Commission agreed to license STV systems for commercial operation.[22] However, in an effort to protect what the Commission considered "free" television, the following significant constraints were imposed on STV development:

1. STV would be allowed only in areas with five or more commercial stations including the STV outlet.

2. Only one STV outlet would be allowed in each community.

3. Limits were placed on forms of programming allowed so that continuous series, recent motion picture films, and sporting events typically aired on advertiser supported television

could not be shown on STV.

4. STV stations were required to broadcast a minimum number of hours of "conventional" TV programming.

It should be noted that this decision was not made with the unanimous consent of the Commission. According to Commissioner Loevinger,

> the program supervisor proposed ... is impractical, ill-advised, unwise, illegal, and unconstitutional and a few other things.[23]

A milder criticism was directed at an apparent inconsistency in the Commission's decision-making. In other areas, such as that of broadcast television allocations, the Commission argued that Section 307 (b) of the Communications Act required it to distribute service equitably throughout the country and therefore deprive no area of service. Yet, in this case, the FCC was limiting STV to areas in which there already were at least four other commercial stations. This was criticized by Zenith representatives because:

> The underlying policy of Section 307 (b) of the Communications Act, which requires the Commission to make a fair, efficient, and equitable distribution of broadcast service among the several "communities," would appear to dictate that subscription television be made available in all markets. In short, if there is a demand for subscription service, the public in all markets is entitled to its benefits if someone is willing to supply it.[24]

The Commission's Report notes an overruling consideration:

> ... we regard the continued availability of free programming as a most important consideration.

> Although we are aware of the merits of the arguments that STV in all communities might help marginal or new stations in small communities, might aid UHF in such communities, might promote diversity of programming; arguments that section 307 (b) of the act requires that STV be allowed in all communities where a demand exists ... where uncertainty about the new service exists with regard to this subject, considerations of protecting against preempting are overriding.[25]

Thus, the Commission turned from a value that some have considered to be most prominent for the FCC- a localized television service- in order to protect the established broadcasting system. Once subscription television came to the FCC's attention, it was considered not in terms of the contribution that it might make to a general communications system in the United States, but as a threat to the FCC's conception of what ought to be dominant in that system. Even Broadcasting magazine, long an opponent of STV, recognized that there would be little opposition to subscription television now that it had been sufficiently controlled:

> Nevertheless, if any of the fire has gone out of the free-vs.-pay debate, it is simply because subscription TV is not considered the threat to free television it once was.[26]

The Commission neither prevented STV from developing at all nor gave it the freedom to compete with the existing service. As in the other cases, the FCC avoided the potential conflict between over-the-air television and STV. However, unlike the other cases, it was not as a "long run" possiblity that the Commission categorized subscription television, but

rather as a "beneficial supplement" to the existing system.[27] This point has been a source of criticism of the Commission's decision. According to a representative of the ADA arguing before the House Commerce Committee:

> ADA consideres the basic premise of the Committee's (the FCC Committee on STV) Report to be fallacious. Educational programming was also first regarded as a 'beneficial supplement' to commercial broadcasting; it required twenty years of experience to learn that the two were incompatible, and required separately licensed channels. FM channels were regarded as beneficial supplements to AM; ...[28]

While this may very well be true, it is important to understand why it is that the Commission consistently resorts to this approach. One way of looking at it is to view the FCC as an organization that avoids conflict in order to simplify the complexities of its task. It imposes a simplifying structure on this complexity by considering the established system of over-the-air television, in the absence of "coercive facts," as primary and the innovation is regarded as a "beneficial supplement."

Most arguments that have been made by both polemicists and analysts of the STV have concentrated upon industry and Congressional pressure as roots of the FCC's restrictive policy on STV. However, there are three important factors that should be considered in this regard.

First, even before Congressional concern was directed at this issue, the Commission, in 1955, formulated the frame-work in which it would evaluate STV, i.e., Will it be a

"proper supplement" or will it impair the development of "free-TV?"[29] Second, as with the other cases, there were significant industry differences on this issue. While VHF broadcasters generally opposed the development of STV, most UHF interests, represented by such organizations as the All-Channel Television Society, favored subscription television. According to Martin Firestone, counsel for ACTS:

> the authorization of such a system will under proper regulatory conditions, aid in the economic development of marginal UHF stations in the larger television markets, and will encourage the lighting up of presently dark UHF allocations.[30]

The reason for this was that most STV operators would turn to UHF stations to air their programming and thus increase the revenues of UHF stations that were generally operating in the red. Third, a primary concern of many opponents was not so much the fact that the FCC was sanctioning the development of STV, but that the Commission was becoming directly involved with program regulation. As an ABC representative noted:

> Commission experience demonstrates the difficulty of 'turning the clock back' after interests become established, after the public has relied upon the Commission's actions, and after substantial investments have been made.[31]

Recognizing the significance of established precedents for the Commission, many broadcasters feared that such controls might now be more readily applied to them. It was for this reason that the STV program restrictions were considered by Broadcasting

magazine, a staunch opponent of STV, to be "extending the FCC's power over programming by an alarming degree."[32]

It would thus appear to be overly simplistic to consider Commission decision-making on STV as emanationg entirely from external pressures. Rather, it is important to consider the decisional process that has led to the development of subscription television into an ancillary service as emanating from additional sources. It is necessary to consider the Commission's historical conception given both the complexity of the FCC's task and the fact that it has not been confronted with a severe disruption from that established system, i.e., it has not been struck with that significant "coercive fact" to which I earlier made reference. As the Commission itself has stated, it has tried to guarantee "that STV will be a supplement and not a replacement for conventional free TV service."[33]

Footnotes

Introduction

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The Historical Context: Growth and Criticism

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25 Warren G. Lavey, Toward a Quantification of the Information/Communication Industries, Cambridge, Mass.: Harvard University Program on Information Technologies and Public Policy, P-74-2, 1974, p.11 and p.25.

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27 Cited in James C. Young, "How Will You Have Your Advertising?" Radio Broadcast, VI (December, 1924), p.248.

28 Bruce Bliven, "How Radio is Remaking Our World," Century, CVIII (June, 1924), 2, p.154.

29 U.S., F.R.C., Annual Report of the Federal Radio Commission, 1st Report, Washigton, D.C.: Government Printing Office, 1927, pp.1 and 8. While the distinction between direct and indirect advertising is somewhat vague, one can say that the former generally was used to indicate outright appeals for the purchase of a particular product, while indirect advertising was limited to simply announcing that a program was being sponsored by a particular company. Later on, direct advertising became defined more and more narrowly until by 1930 it was considered to mean only "stating prices." Cf. U.S., Congress, Senate Committee on Interstate Commerce, Hearings on S. 6, 71st Congress, 1929-30, Washington, D.C.: G.P.O., 1932, p.1705.

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39 Educational Broadcasting Review, IV (February, 1970), pp.12-22.

40 Harry J. Skornia, Television and Society: An Inquest and Agenda for Improvement, New York: McGraw-Hill, 1965.

41 Les Brown, Television: The Business Behind the Box, New York: Harcourt, Brace, and Jovanovich, 1971.

42 Martin Mayer, About Television, New York: Harper and Row, 1972.

43 Skornia, p.10.

44 Brown, pp.15-16.

The Historical Context (cont.)

45 Mayer, pp.55ff.

46 U.S. Commission on Organization of the Government, Committee on Regulatory Commissions, Staff Report on the FCC (prepared by William W. Golub), September 15, 1958, Part I, Chapter 12.

47 Erwin G. Krasnow and Lawrence D. Longley, The Politics of Broadcast Regulation, New York: St. Martins, 1973, p.58.

48 Roger G. Noll, Reforming Regulation: Studies in the Regulation of Economic Activity, Washington, D.C.: The Brookings Institution, 1971, pp.24-26.

49 Le Duc, p.ix. Le Duc nevertheless considers this surprising because unlike agencies such as the ICC and CAB, the FCC does not have to supervise broadcast industry rates and services to insure reasonable charges and good service without impairing the industry's economic stability. This is the function of the FCC only for common carrier regulation. Cf. Le Duc, p.24.

50 The President's Advisory Council on Executive Organization, A New Regulatory Framework: Report on Selected Independent Regulatory Agencies (The Ash Report), Washington, D.C.: G.P.O., 1971.

51 E. Pendleton Herring, "Politics and Radio Regulation," Harvard Business Review, XIII (January, 1935), 2, p.173.

52 Noll, p.21.

53 Henry Geller, "A Modest Proposal to Reform the Federal Communications Commission," draft mimeo, April, 1974, p.2.

The Historical Context (cont.)

54 Beverly C. Moore, Jr., "The FCC: Competition and Communication," in Mark J. Green (ed.), The Monopoly Makers, New York: Grossman, 1973, p.61.

55 Avard W. Brinton, The Regulation of Broadcasting by the FCC: A Case Study in Regulation by Independent Commission, Unpublished doctoral dissertation, Harvard University, 1962, p.58.

56 Krasnow and Longley, pp.105-11. While generally accepting the argument that the broadcasting industry exerts a great influence on FCC decision-making, Krasnow and Longley do point to the unique precedent in broadcasting that it was the industry itself that initiated its own regulation in the 1920s to bring order into an increasingly chaotic system.

57 Bernard Schwartz, The Professor and the Commissions, New York: Knopf, 1959, p.38.

58 James M. Landis, Report on Regulatory Agencies to the President-Elect, Washington, D.C.: G.P.O., 1960, p.71. It has been claimed that of particular importance are industry advisory bodies that have often been called upon by the FCC to make recommendations on policy questions. Cf. U.S., Congress, Senate, Committee on Interstate and Foreign Commerce, Allocation of TV Channels: Report of the Ad Hoc Advisory Committees on Allocations, 85th Cong., 2d sess., 1958, pp.221-26.

59 Krasnow and Longley, p.58.

60 Ibid., p.62.

61 New York: Atheneum, 1964, pp.277-8.

62 Ibid., p.36.

63 Walter B. Emery, Broadcasting and Government: Responsibilities and Regulation, Michigan State University Press, 1971, p.395. Brinton argues further that these investigations have led to few constructive changes since in order

The Historical Context (cont.)

63 (cont.)
to retain control, Congress has never questioned the basic soundness of the commission form. Brinton, p.52.

64
Cf. Edwin B. Spievack, "Presidential Assault on Communications," Federal Communications Bar Journal, XXIII (1969), 3, p.157 and John Herbers, "Nixon's Imprint Deep at the Regulatory Agencies," The New York Times, May 6, 1973.

65
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Ibid.

67
Marver H. Bernstein, Regulating Business by Independent Commission, Princeton, N.J.: Princeton, 1955, pp.88-90.

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Ibid., p.101.

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Roger G. Noll, Merton J. Peck, and John J. McGowan, Economic Aspects of Television Regulation, Washington, D.C.: The Brookings Institution, 1973, p.108.

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Ibid., p.106.

71
Ibid., pp.105-6.

72
James Q. Wilson, "The Dead Hand of Regulation," The Public Interest, 25 (Fall, 1971), pp.39-58.

73
Ibid., p.48. For Jaffe's position see "The Independent Agency: A New Scapegoat," and "The Scandal in TV Licensing," in Samuel Krislov and Lloyd D. Musolf (eds.), The Politics of Regulation, Boston: Houghton-Mifflin, 1964, pp.128-33 and pp.231-39.

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76 Cited in Lawrence P. Lessing, "The Television Freeze," Fortune, XXXX (November, 1949), pp.124-5.

77 President's Communication Policy Board, Telecommunications: A Program for Progress, Washington, D.C.: G.P.O., 1951, p.195.

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79 Landis, p.53. Landis later indicated that it was the "complexity and prolixity of existing procedures" which helped defeat the reform measures recommended by his commission. Cf. his "Perspectives on the Administrative Process," in Krislov and Musolf, pp.87-91.

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81 President's Task Force on Telecommunications, Final Report, Washington, D.C.:G.P.O., 1969, Chap.9, p.24.

82 The Ash Report, p.27.

83 U.S., Office of Telecommunications Policy, The Radio Frequency Spectrum, Washington, D.C.: G.P.O., 1973, p.D-34.

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84 Paul W. Cherington, Leon V. Hirsch, and Robert Brandwein (eds.), Television Station Ownership, New York: Hastings House, 1971, p.16.

85 Schwartz, pp.76-7.

86 Henry J. Friendly, The Federal Administrative Agencies, Cambridge, Mass.: Harvard University Press, 1962, p.73.

87 Noll, et al., pp.120-1.

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[1] Graham T. Allison, Essence of Decision: Explaining the Cuban Missile Crisis, Boston: Little, Brown and Co., 1971, p.5.

[2] Herbert A. Simon, Administrative Behavior, New York: MacMillan, 1957, pp.62-64.

[3] Ibid., p.62

[4] Daniel Katz and Robert L. Kahn, The Social Psychology of Organizations, New York: Wiley, 1965, p.71.

[5] Ibid., pp.71-2.

[6] Steinbruner, pp.27-29 and 56.

The Internal View

[1] Katz and Kahn, p.73.

[2] Anthony Downs, Inside Bureaucracy, Boston: Little, Brown, 1967, p.50.

[3] The notion that authority hierarchies develop in part, at least, in response to an uneven distribution of information is discussed by Arrow in his recently published Fels Lectures under the title The Limits of Organization, New York: Norton, 1974, pp69-70.

[4] Downs, p.99.

[5] Noll, pp.27-28.

[6] Luther Gulick, "Notes on the Theory of Organization," in L. Gulick and L. Urwick, The Elements of Administration, New York: Harper, 1945.

[7] Alfred D. Chandler, Jr., Strategy and Structure: Chapters in the History of the American Business Enterprise, Cambridge: M.I.T. Press. 1962.

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[1] Cf. Charles Perrow, Organizational Analysis: A Sociological View, Belmont, Ca.: Wadsworth, 1970 and Katz and Kahn, p.70.

[2] J. Eugene Haas and Thomas E. Drabek, Complex Organizations: A Sociological Perspective, New York: MacMillan, 1973, p.41.

[3] The earlier cited works of Allison and Chandler are among the recent works that have taken up this perspective.

[4] Cf. Joan Woodward, Industrial Organization, London: Oxford, 1965 and William L. Zwerman, New Perspectives on Organization Theory, Westport, Ct: Greenwood, 1970.

[5] Cited in Krasnow and Longley, p.24.

[6] F.E. Emery and E.L. Trist. "The Causal Texture of Organizational Environments," Human Relations, 18, 1965, pp. 21-32.

The Cognitive Perspective

[1] Le Duc, p.210.

[2] Ibid., p.29.

[3] Steinbruner, p.144.

[4] Ibid., p.8, n.3.

[5] Thomas S. Kuhn, The Structure of Scientific Revolutions, Second Edition, Chicago, Ill.: The University of Chicago Press, 1970.

[6] Steinbruner, p.50, n.5.

[7] Arrow, p.52.

[8] The word "analytic" is used rather than "rational" in order to avoid associating the alternative to be suggested with "irrational" decision-making.

[9] Arrow, p.47.

[10] Steinbruner, p.18.

[11] This is derived from Steinbruner's formulation. Cf. Steinbruner, p.16.

[12] Arrow, p.74.

[13] Ibid., p.56.

[14] Ibid., p.55.

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15 Ibid., p.41. This point has also been made by Richard Cyert and James March, A Behavioral Theory of the Firm, Englewood Cliffs, N.J.: Prentice-Hall, 1963.

16 Arrow, p.51.

17 Ibid., p.57.

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19 Ibid., p.67.

20 Ibid., p.115.

21 Ibid.,

22 Ibid., pp.117-18.

23 Ibid., p.131.

24 Ibid., pp.97-100.

25 Arrow, p.52.

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[1] Ronald H. Coase, "The Economics of Broadcasting and Public Policy," in The Crisis of the Regulatory Commissions, ed. by Paul W. MacAvoy, New York: Norton, 1970, pp.95-6.

[2] Kurt Borchardt, Structure and Performance of the U.S. Communications Industry, Boston: Harvard, 1970, p.15.

[3] Commission on Organization of the Executive Branch of Government, p.10.

[4] U.S., Congress, Senate, Committee on Interstate and Foreign Commerce, Allocation of TV Channels, p.9.

[5] Landis, Report of the President-Elect, p.53.

[6] As early as 1923 Hoover considered the extent of interference to be "simply intolerable." Cf. Radio Broadcast, August, 1923.

[7] Emery, p.26.

[8] Department of Commerce, "Minutes of Open Meeting of Department of Commerce Conference on Radio Telephony" (1922, mimeo), p.1, cited in Head, p.159.

[9] Hoover, Secretary of Commerce v. Intercity Radio Co., Inc., 286F. 1003 at 1007 (1923) and U,S. v. Zenith Radio Corp., 12 F. (2d) 614 at 618 (1926).

[10] F.C.C., Annual Report: 1938, Wash., D.C.: G.P.O., p.50.

[11] F.C.C., Annual Report: 1939, Wash., D.C.: G.P.O., p.36.

[12] F.C.C., Annual Report: 1941, Wash., D.C.: G.P.O., p.22.

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[1] Krasnow and Longley, p.92.

[2] Murray Edelman, The Licensing of Radio Services in the United States, 1927 to 1947, Urbana, Ill.: University of Illinois Press, 1950, p.123. Cf. Siepmann, p.246, W. Rupert MacLaurin, Invention and Innovation in the Radio Industry, New York: MacMillan, 1949, p.239, Lawrence Lessing, Man of High Fidelity: Edwin Howard Armstrong, New York: Bantam, 1969, p.269, Krasnow and Longley, p.92, and Christopher H. Sterling, "Second Service: Some Keys to the Development of FM Broadcasting," Journal of Broadcasting, XV (Spring, 1971), 2, pp.181-94.

[3] Barnouw, The Golden Web, p.242.

[4] Krasnow and Longley, p.95, n.24.

[5] Edwin Armstrong, "A Method of Reducing Disturbances in Radio Signaling by a System of Frequency Modulation," Proceedings of the Institute of Radio Engineers, Vol.24 (May, 1936), pp.689-740.

[6] Cited in U.S., Congress, House of Representatives, Committee on Interstate and Foreign Commerce, Hearings on H.J.R. 78, 80th Cong., 2d Sess., 1948, p.8.

[6A] F.C.C., Annual Report: 1938, p.66.

[7] F.C.C., Annual Report: 1937, p.40.

[8] Brinton, p.102.

[9] F.C.C., Annual Report: 1946, p.vii.

[10] Cited in F.C.C., Annual Report: 1940, p.66.

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11 U.S., F.C.C., "Report on Frequency Modulation," Docket #5805, May 20, 1940.

12 F.C.C.; Annual Report: 1940, p.68.

13 F.C.C., Annual Report: 1944, p.16 and Annual Report: 1945, p.20.

14 Committee on Interstate and Foreign Commerce, Hearings on H.J.R. 78, p.182

15 Ibid., pp.215-16.

16 Ibid., pp.88-9.

17 U.S., F.C.C., "Statement on FM Broadcast Service," in Docket 6651, January 15, 1945, reprinted in Broadcasting, January 16, 1945, p.17.

18 Ibid.

18A Committee on Interstate and Foreign Commerce, Hearings on H.J.R. 78, p.88.

19 U.S., F.C.C., Docket #6641, March 12, 1945, pp. 130-1.

20 Committee on Interstate and Foreign Commerce, Hearings on H.J.R. 78, pp.250-1.

21 Lessing, pp.257-8 and Business Week, Nov. 4, 1944, p.88.

22 U.S., F.C.C., "Report on Proposed Allocations from 25,000 kc to 30,000,000 kc," cited in Broadcasting, Jan. 16, 1945, p.17.

The FM Case (cont,)

23 Broadcasting, "FCC Allocations Order Text," XXIX, July 2, 1945, pp.64 and 68.

24 Committee on Interstate and Foreign Commerce, Hearings on H.J.R. 78, p.186.

25 Ibid., pp.90-95 and 125-33.

26 F.C.C., Annual Report: 1945, p.20.

27 Committee on Interstate and Foreign Commerce, Hearings on H.J.R. 78, p.190.

28 While it was moved out of the 50mc. range, it was never completely moved to the UHF area where the Commission expected it to be moved. This development is explored in the next case to be analyzed.

29 Committee on Interstate and Foreign Commerce, Hearings on H.J.R. 78, p.190.

30 Broadcasting, "FCC Allocations Order Text," p.68.

31 Broadcasting, July 2, 1945, p.13.

32 Lessing, pp. 259-60.

33 U.S., F.C.C., "In the Matter of Promulgation of Rules and Regulations and Standards of Good Engineering Practice for FM Broadcasting Other than Non-Commercial Educational Broadcast Service," Docket #6768, pp.29-33.

34 Committee on Interstate and Foreign Commerce, Hearings on H.J.R. 78, p.197.

35 Harry P. Warner, Radio and Television Law, New York: Bender, 1948, p.603.

The FM Case (cont.)

[36] F.C.C., Annual Report: 1947, pp.20-21.

[37] Lessing, p.269.

[38] Committee on Interstate and Foreign Commerce, Hearings on H.J.R. 78, p.246.

[39] That N.B.C. regarded FM as such an ancillary service is evident even from its most optimistic pronouncements on the service. It was considered "a method of radio transmission which promises, not a new type of program but improved reception of sound in many localities." The National Broadcasting Company, N.B.C. in 1943: Annual Review, p.23.

[40] U.S., Congress, Senate, Report of the Special Committee to Study Problems of American Small Business, 79th Cong., 2d Sess., April 10, 1944, p.5.

[41] Cf. Emery, p.135.

[42] F.C.C., Annual Report: 1949, p.2.

[43] Ibid.

[44] U.S., Congress, Senate, Committee on Interstate and Foreign Commerce, Hearings on S. 3095, 83rd Cong., 2d Sess., 1954, pp.1062-3.

[45] F.C.C., Annual Report: 1970, p.43.

[46] F.C.C., Annual Report: 1955, p.6.

[47] F.C.C., Annual Report: 1957, p.4.

[48] Broadcasting, "FCC Allocations Order Text," p.68.

The FM Case (cont.)

[49] F.C.C., Annual Report: 1948, p.2 and Annual Report: 1949, p.2.

[50] F.C.C., Annual Report: 1969, p.127.

[51] F.C.C., Annual Reports: 1956-71.

[52] F.C.C., Annual Report: 1945, p.20.

Ultra-High Frequency Television

1 Moore, p.47; Brinton, pp.240ff.; Noll, Peck, and McGowan, p.102; Krasnow and Longley, p.96; and Anthony Lewis, "To Regulate the Regulators," in Krislov and Musolf, p.9.

2 Moore, p.47.

3 Lewis, p.9.

4 Noll, Peck, and McGowan, p.117.

5 Chester, Garrison, and Willis, p.48; Douglas W. Webbink, "The Impact of UHF Promotion: The All-Channel Receiver Law," Law and Contemporary Social Problems, XXXIV (Summer, 1969), pp.543-44; U.S., Congress, House, Committee on Interstate and Foreign Commerce, All-Channel Receivers and Deintermixture, 87th Cong., 2d Sess., 1962.

6 Krasnow claims that "no one seemed to realize how well the all-channel television law would work." Krasnow and Longley, p.101. Johnson claims that "UHF ... like the little engine that could appears to be climbing steadily to the top of the mountain." Nicholas Johnson, "The Why of Public Broadcasting," Educational Broadcasting Review, I (December, 1967), 2, pp.5-10.

7 Lawrence Lessing, "The Television Freeze," Fortune, XXXX (November, 1949), p.164. John Michael Kittross, Television Frequency Allocation Policy in the United States, Unpublished doctoral dissertation, University of Illinois, 1960.

8 Le Duc, p.62.

9 U.S., F.C.C., "Report on Proposed Allocations from 25,000 kc to 30,000,000 kc," Docket 6651 (Jan. 15, 1945) and "Final Report on Allocations from 25,00 to 30,000,000 kc," Docket 6651 (May 25, 1945). F.C.C., Annual Report: 1946, p.17 and Annual Report: 1947, pp.23-24.

[10] Robert H. Stern, "Regulatory Influences upon Television's Development: Early Years under the Federal Radio Commission," American Journal of Economics and Sociology, XXII (April, 1963), 2, pp.347-62.

[11] F.C.C., Annual Report: 1939, p.45.

[12] F.C.C., "Final Report on Allocations ...," pp.91-99.

[13] Ibid.

[14] F.C.C., Annual Report: 1945, p.85.

[15] For a description of the problems encountered, see Lessing, "The Television Freeze," p.127.

[16] 13 Fed. Reg. 5182 (1948).

[17] U.S., F.C.C., Sixth Report and Order, reprinted in Broadcasting, XLII (April-June, 1952).

[18] Cited in Noll, Peck, and McGowan, pp.101-104.

[19] F.C.C., Annual Report: 1952, p.112.

[20] F.C.C., Sixth Report and Order.

[21] Ibid., par. 197.

[22] F.C.C., Annual Report: 1956, p.97.

[23] Ibid., pp.95-96.

[24] See particularly F.C.C., Annual Report: 1960, pp.44-45.

[25] Krasnow and Longley, pp.98, ff.

[26] Broadcasting, September 10, 1951, p.78.

[27] U.S., Congress, Senate, Report of the Ad Hoc Committee on Allocations, pp.97-101.

[28] U.S.,Congress, Senate, Committee on Interstate and Foreign Commerce, Television Network Regulation and the UHF Problem, Plotkin Memorandum, 84th Cong., 1st Sess., 1955.

[29] Ibid., p.12.

[30] Ibid., p. 11.

[31] F.C.C., Annual Report: 1954, p.92.

[32] U.S., Congress, Committee on Interstate and Foreign Commerce, Network Broadcasting (The Barrow Report), 85th Cong., 2d Sess., 1958, p.34. Cf. Broadcasting, November 11, 1956, pp.88-89.

[33] U.S., Congress, Senate, Committee on Interstate and Foreign Commerce, Hearings on S.R. 13 and 163, 84th Cong., 2d Sess., 1956, p.331.

[34] F.C.C., Annual Report: 1956, p.160 and 1960, p.44. It is interesting that in both cases the FCC added that this meant that it would have to shift all television to the UHF area.

[35] Krasnow and Longley, p.100.

[36] Ibid., p.98.

[37] F.C.C., Annual Report: 1962, p.61.

[38] F.C.C., Annual Report: 1954, p.91.

[39] U.S., Congress, Senate, Report of the Ad Hoc Committee on Allocations, p.51.

[40] Plotkin Memorandum, pp.5 and 8.

[41] F.C.C., Annual Report: 1955, p.9.

[42] Ibid., p.95.

[43] F.C.C., Annual Report: 1956, p.94.

[44] F.C.C., Annual Report: 1958.

[45] F.C.C., Annual Report: 1962, p.4.

[46] F.C.C., Annual Report: 1967, p.29.

[47] F.C.C., Annual Report: 1968, p.24.

[48] F.C.C., Annual Report: 1969, p.30.

[49] Lavey, p.22.

Cable Television

[1] U.S., F.C.C., C.A.T.V. and Repeater Service, 26 F.C.C., 403 (1959).

[2] U.S., F.C.C., Carter Mountain Transmission Corp., 32 F.C.C., 459 (1962).

[3] U.S., F.C.C., First Report and Order, 38 FCC, (April, 1965).

[4] U.S., F.C.C., Second Report and Order, 2 F.C.C., 2d 725 (March, 1966).

[5] U.S., F.C.C., Cable Television Report and Order, 36 FCC 2d, 143 (February, 1972).

[6] Cf. Le Duc and Rolla Edward Park, Cable Television and UHF Broadcasting, Rand, 1971.

[7] Among these have been studies from Rand such as N.E. Feldman, The Potential Role of Cable Television in the Wideband Distribution System, Santa Monica, Ca.: Rand, 1970, Walter S. Baer, Interactive Television: Prospects for Two-Way Services on Cable, 1971, and Herbert Goldhamer, The Social Effects of Communication Technology, 1970. Also included among analyses that have focused on future potential are On the Cable: The Television of Abundance, Sloan Commission on Cable Communications, New York: McGraw-Hill, 1971 and a popular, rather polemical work by Ralph Lee Smith, The Wired Nation, New York: Harper and Row, 1972.

[8] See particularly Leland Johnson's Cable Television and the Question of Protecting Local Broadcasting, Rand, 1970 and Noll, Peck, and McGowan, pp.162-66.

[9] Le Duc, p.59.

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10 Smith, p.45. Cf. Donald R. LeDuc, "The FCC v. C.A.T.V., et al.: A Theory of Regulatory Reflex Action," Federal Communications Bar Journal, XXIII (1969), 2, pp.93-109, Moore, pp.64-70, and Richard O. Berner, Constraints on the Regulatory Process: A Case Study of the Regulation of Cable Television, unpublished honors thesis, Harvard College, 1974, pp.78-80.

11 Berner, pp.141-81.

11 A Le Duc, p.74.

12 Noll, p.3.

13 F.C.C., Annual Report: 1958, p.108.

14 F.C.C., CATV and Repeater Services, 26, 403 (1959). Kenneth Cox, who would later serve as an FCC Commissioner, argued that priorities should be established as follows: 1-locals, 2-semi-satellites, 3-pure satellites, 4-booster translators, 5-CATV because "the Commission should always keep the goal of the greatest possible degree of local service in the forefront of all its deliberations and actions." Cf. U.S., Congress, Senate, Committee on Interstate and Foreign Commerce, Review of Allocation Problems of TV Services to Small Communities, 85th Cong., 2d Sess., 1958, pp.48-49.

15 F.C.C., Annual Report: 1962, pp.65-66. It is also significant that into the 1960s CATV continued to be considered as an "adjunct."

16 Cf. F.C.C., Carter Mountain Transmission Corp.

17 Cf. U.S., Congress, Senate, Committee on Interstate and Foreign Commerce, VHF Booster and Community Antenna Legislation: Hearings on S. 1739 ... S. 2303, 86th Cong., 1st Sess., 1959, p.810, U.S., Congress, Senate, Committee on Interstate and Foreign Commerce, Review of Allocation Problems of TV Services to Small Communities, 85th Cong., 2d Sess., 1958, p.3948, and U.S., F.C.C., "In the Matter of Inquiring into the Impact of Community Antenna ... on the Orderly Development of Television Broadcasting," Docket #12443, 1959.

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18 Senate, Committee on Interstate and Foreign Commerce, Review of Allocation Problems, p.4142.

19 John C, Doerfer, "Community Antenna Television Systems," in Federal Communications Bar Journal, 14 (1955), pp.4-14.

20 F.C.C., Annual Report: 1958, p.108.

21 F.C.C., C.A.T.V. and Repeater Services, p.426.

22 Ibid.

23 F.C.C., Annual Report: 1965, p.80.

24 Le Duc, p.119.

25 F.C.C., Annual Report: 1965, p.81.

26 Ibid., p.80.

27 Cable Vision, Inc. v. KUTV, Inc., 335 F. 2d 348 (9th Cir., 1964).

28 F.C.C., First Report and Order.

29 Ibid., p.700.

30 U.S., Congress, House, Committee on Interstate and Foreign Commerce, Regulation of Community Antenna Television: Hearings on H.R. 7715, 89th Cong., 1st Sess., 1965, p.32.

31 Ibid., p.46

Cable Television (cont.)

[32] F.C.C., The Second Report and Order,

[33] Smith, p.51.

[34] Rollo Edward Park, Cable Television and UHF Broadcasting, R-689-MF, Santa Monica, Ca.: Rand, January, 1971.

[35] Le Duc, pp.158-9.

[36] Cf. U.S., F.C.C., "Notice of Inquiry and Notice of Proposed Rulemaking in Docket 18397," 15 FCC 2d 417 (1968).

[37] Le Duc, p.244, n.29.

[38] Anne W. Branscomb, "The Teleprompter Syndrome and its Aftermath- Will Cable Realize its Promise?" Harvard University Program on Information Technologies and Public Policy, February 4, 1974, draft mimeo.

[39] Business Week, "The TV Networks Shrug Off New Competition," March 27, 1971, pp.90-96. It is reported here that in the last five years over-the-air TV has grown into twice as many households than has CATV.

[40] Theodore Conant, et al., Antenna-Less TV, New York: Shroder Bank, 1971, cited in Berner, p.37.

The Subscription Television Case

[1] U.S., F.C.C., Fourth Report and Order, 2d 466 (December, 1968).

[2] Borchardt, p.71. Cf. Noll, Peck, and McGowan, p.148.

[3] R.H. Coase and Edward W. Barrett, Educational TV: Who Should Pay?, Washington, D.C.: American Enterprise Institute for Public Policy Research, 1968, p.17.

[4] Moore, pp.70-73.

[5] Chester, Garrison, and Willis, p.51.

[6] Coase and Barrett, p.43 and p.64.

[7] Noll, Peck, and McGowan, pp.147-49.

[8] Ibid., [illegible].

[9] Minow, pp.227-28. [illegible].

[10] F.C.C., Annual Report: 1950, p.11 and Minow, p.231.

[11] F.C.C., Annual Report: 1953, p.98.

[12] Ibid.

[13] F.C.C., Annual Report: 1955, p.98.

[14] Ibid.

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15 F.C.C., Annual Report: 1956, p.101.

16 U.S., F.C.C., First Report, Pike and Fisher's Radio Regulations, 16, 1509.(1957)

17 U.S., Congress, House, Committee on Interstate and Foreign Commerce, Subscription Television, 90th Cong., 1st Sess., 1967.

18 U.S., F.C.C., Third Report, 26, 265, May, 1959.

19 F.C.C., Annual Report: 1965, pp.114-15.

20 F.C.C., Annual Report: 1967, p.39.

21 Committee on Interstate and Foreign Commerce, Subscription Television, p.4.

22 F.C.C., Fourth Report and Order.

23 Committee on Interstate and Foreign Commerce, Subscription Television, p.382.

24 Ibid., p.350.

25 F.C.C., Fourth Report and Order, pp.518-19.

26 Broadcasting, December 16, 1968, p.42.

27 F.C.C., Fourth Report and Order, p.473.

28 Committee on Interstate and Foreign Commerce, Subscription Television, p.644.

The Regulation of Broadcasting in the United States- A Draft Report

Vincent Mosco

October 10, 1974

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Introduction

This thesis concerns the American system of broadcasting and its regulation by the Federal Communications Commission. My primary purpose is to do a comparative analysis of decision-making processes and outcomes in four cases involving broadcasting innovations. The latter include frequency modulation (FM) radio, ultra-high frequency (UHF) television, cable television (CATV), and subscription television (STV). As a comparative case study, this analysis should be of interest to the social scientist concerned with developing generalizations about decision-making processes, outcomes, and the relationships between them, as well as for the policy maker who is interested in the kinds of processes that are necessary for achieving desired outcomes.

There have been many studies on the general topic of broadcast regulation, as well as on the specific cases that comprise my sphere of analysis. However, as my review of the literature below indicates, with few exceptions, studies of broadcasting innovations have focused on specific cases. Many of these are good chronicles of events in these specific cases and, in some instances, interesting explanations have been offered. I intend to build upon these case studies by filling in major gaps in the literature on each and, more importantly, by comparing the decision-making processes and outcomes across

cases. The need for comparative analysis in this area has recently been expressed rather well by Le Duc in his study of cable television:

> ... while each specific agency action relating to innovative challenge might be explained in terms of its own unique facts, a comparison of a substantial number of decisions concerning similar types of challenges over an extended period of time might reveal significant parallels in approach and resolution transcending any explanation involving coincidental consistency, the tactics of a particular coalition of opponents, or the attitudes of a specific administration.[1]

This thesis is thus basically an attempt to discover those "significant parallels in approach and resolution" which transcend the particular circumstances of each case and which might help us to better understand the operation of a government agency charged with the regulation of a rapidly changing industry.

As my review of the literature further indicates, those studies that have suggested explanations have generally done so based on specific assumptions about rational decision-making. I suggest another possible basis of explanation.

Specifically, the following hypotheses are tested:

1. The most useful way to understand the processes involved in decision-making on these four cases is to consider the processes as responses to structural complexity that do not conform to traditionally accepted notions about rational decision-making.[2]

2. These processes have led to similar outcomes in each of the four cases, i.e., each innovation has developed into a role that is ancillary to the then dominant commercial broadcasting system.

It is important to recognize that this analysis is limited to one particular sphere of FCC activity- the regulation of broadcasting. It does not deal explicitly with the responsibility of the FCC to regulate the interstate rates and services of telephone and telegraph common carrier companies. However, conclusions based on the comparison of processes and outcomes in the area of broadcasting innovations might prove useful to the analyst in the field of common carrier regulation. It should also be pointed out that this thesis does not concern the entirety of the FCC's role in broadcasting. It is not explicitly concerned with the licensing of stations, nor with the review of program content. Both because of my interest in the regulation of innovation and also because concentration in one area facilitates comparison, I have selected four cases involved with broadcasting innovations. Finally, it should be understood that this is not an explicitly historical analysis. While I try to remain sensitive to the uniqueness of the historical context out of which each case emanates, my thesis is basically a comparative analysis. Much of the historical work has already been done on these cases. I intend to fill in some of the gaps in that work and build upon it through a comparison of the processes and outcomes in each case. I now

turn to an overview of two characteristics that have marked the system of broadcasting in the United States in order to set the context for my comparative analysis.

The Historical Context: Growth and Criticism

In a recent review article a British journalist commented that "Everyone hates American television, apart from the people who watch it."[1] While the precise accuracy of this statement might be subject to challenge, it is certainly true that two of the characteristics that have significantly marked the development of broadcasting in America have been the rapidity of its growth and the amount of criticism directed at the system.

It was less than sixty years ago that David Sarnoff, then an assistant manager at American Marconi, proposed the development of a "Radio Music Box" which, he claimed, would "make radio a 'household utility' in the same sense as the piano or phonograph."[2] Just six years later, after the use of radio in World War I had lessened initial skepticism and and after American Marconi had become the Radio Corporation of America, Sarnoff's novel idea became a commercial reality. In that year, 1922, $60 million was spent by the public on receiving equipment. By 1924 sales had climbed to $358 million.[3]

Two years later, another idea of Sarnoff's was fulfilled with the development of a major instrument of broadcast industry growth- the network. In 1925 Sarnoff had suggested putting

> all stations of all parties into a broadcasting company which can be made self-supporting and probably revenue-producing, the telephone company to furnish wires as needed.[4]

A year later, RCA, General Electric and Westinghouse agreed to form the National Broadcasting Company and lease lines from A.T. and T. In 1927, NBC split into two national networks, the "Red" and the "Blue" and the Columbia Phonograph Broadcasting System, later known as CBS, was formed. Thus, less than a decade into its commercial growth, the foundation was substantially set for the development of broadcasting into a national system.

While the economic consequences of the depression were felt by the radio industry in the early thirties, broadcasting continued to grow throughout that decade. The $200 million that was spent on radio sets in 1932 grew to $350 million 1934.[5] A major source of this growth was the development of advertiser sponsored programming on the national networks. This development marked a major change from the previous decade. For, in the twenties, the idea of using advertising to finance the broadcasting system had been looked on either with disfavor or was not considered at all. In the initial issue of Radio Broadcast magazine, several suggestions were made for financing the system including endowment by wealthy individuals and local financing through tax revenues, but no mention at all was made of advertising.[6] The Radio Act of 1927 made merely

one oblique reference to advertising by requiring that the person or organization paying for time be named on the air as such.[7] An early A.T. and T. proposal for "toll broadcasting" was considered by some to be "mercenary" and "positively offensive."[8] Nevertheless, this experiment in broadcasting by A.T. and T. which centered on its chief station, WEAF in New York, was instrumental in the development of sponsored network broadcasting.[9] Thus, by 1938, a year in which sponsors were spending in excess of $150 million for time,[10] there were 660 stations in operation and over 260 of these were affiliated with either NBC or CBS.[11] Broadcasting was among the few industries for which the 1930s could be considered by analysts as "easygoing years"[12] that "saw commercial broadcasters riding high."[13]

World War II contributed to the slowdown in commercial growth in the early forties. The commercial development of such innovations as television and frequency modulation radio was delayed until the end of the war. Nevertheless, as in World War I, certain aspects of broadcasting were able to grow more rapidly than would have perhaps been expected in peacetime. For example, the technical development of FM radio was particularly assisted by its use in the war. The war also gave rise to expanded uses of broadcasting such as the development of an international broadcast news service. By the middle of the decade there was considerable evidence of further commercial growth in the established commercial system. By this

time there were well over 900 stations on the air.[14] Network advertising sales had reached $200 million[15] and NBC, forced by the FCC and the Supreme Court to divest itself of its minor network- "the Blue"- was able to sell it for $8 million.[16]

The 1950s were marked by the growth of the television industry. In 1952, the year in which the FCC issued its Sixth Report and Order allocating television stations to localities, there were 108 stations on the air and 15 million sets. Three years later there were 377 stations in operation and over 30 million receivers.[17] By 1960 the latter figure had passed the 50 million mark[18] and as of 1970 there were 84 million sets in over 95% of American households.[19] As of 1972 there were over 900 stations on the air[20] and the average viewing time per hour, per day has been estimated at 6.2 hours.[21]

While home radio sales, undoubtedly influenced by the television upsurge, leveled off in the early fifties, growth picked up again in the early sixties when annual sales of 20 million were recorded. This growth continued into the late sixties when the 30 million mark was passed[22] and in 1971 over 45 million sets were sold.[23] By 1972 over 9000 AM and FM stations were in operation and approximately 98% of American households were equipped with radios.[24]

The broadcasting industry, including both radio and television, now generates in excess of $3 billion in net annual revenues.[25]

The growth of broadcasting has been paralleled by the amount of criticism directed at the system. One particular focus of strident criticism began in the earliest days of broadcasting. Radio Broadcast magazine pointed to it in its first publication in 1922:

> No one who reads this article will have to consider very long what broadcast advertising implies, before the presence of the difficulty becomes apparent enough. The very thought of such a thing growing to be common practice is sufficient to give any true radio enthusiast the cold shakes.[26]

It was not only the "enthusiast" who got the "cold shakes" from the concept of advertising on the air. Many others felt that the popularity of the system would dissipate were it to continue being financed by commercial advertising. According to Herbert Hoover, then responsible for the regulation of radio as Secretary of Commerce:

> I believe that the quickest way to kill broadcasting would be to use it for direct advertising. The reader of the newspaper has an option whether he will read an ad or not, but if a speech by the President is to be used as the meat in a sandwich of two patent medicine advertisements, there will be no radio left.[27]

There were several calls heard in the 1920s for the enactment of legislation to prohibit the use of radio for advertising purposes.[28] No such ban was enacted, of course, but as the Federal Radio Commission (the precursor of the FCC), began its work in 1927, chief among the recommendations made to it was the abolition of so-called "direct advertising" and the

confinement of advertising to the daytime hours.[29]

This criticism continued unabated into the 1930s, particularly among Congressmen and educators who were interested in reserving a number of channels for non-commercial use. Particularly vocal among the former were Senator Burton K. Wheeler who criticized the radio industry for having turned the airwaves into a "pawnshop" and Senator James Couzens who attempted without success to force the Federal Radio Commission to limit advertising solely to an announcement of sponsorship.[30] Joy Elmer Morgan was one of the more outspoken critics representing educational interests. In a 1931 article he criticized the

> giving away of radio frequencies of untold value with no thought of compensation or no reservation, as in the case of the public domain, for the use of education.[31]

It should be noted that not all those concerned with advertising were critical of its role. In 1934, a group called the National Committee on Education by Radio published a collection of essays by people involved in the commercial broadcasting system in order to defend the industry. Typical among these essays is one by a radio manufacturer and former FRC Commissioner Harold La Fount. Far from denying that "commercialism is the heart of broadcasting in the United States," La Fount argues that it had contributed "everything" to the system and was therefore "the life blood of the industry."[32]

The 1940s saw criticism of the commercial basis of

broadcasting coming from both the FCC as well as from a man who helped lay the technical foundation for the industry. In its 1941 Report on Chain Broadcasting, the FCC criticized the increasing concentration of broadcasting control over programming in the two chief commercial networks.[33] The order accompanying this report that led to the sale by NBC of its minor network was later upheld by the Supreme Court.[34] In 1946 the FCC published a report on the Public Service Responsibility of Broadcast Licensees, the so-called "Blue Book," in which what was considered both an excessive amount of advertising and a paucity of local programming came under criticism.[35] One of the men who prepared this report was more strident in his criticism of what he called "the networks' abdication to the advertisers" in a book published in 1946. In Radio's Second Chance Charles Siepmann argued that

> Radio has become the drudge of advertising, selling itself to big business for a handsome price, identified with it body and soul, if any soul remains to it.[36]

In that same year, Lee de Forest, who forty years earlier had developed the "Audion"- a key element in the vacuum tube- was even more vehement in his criticism of the system that he had helped to develop. In a letter to the convention of the National Association of Broadcasters, de Forest criticized the industry for what he felt it had done to his "child":

> You have made of him a laughing stock to

> intelligence ... you have cut time into tiny segments called spots (more rightly stains) wherewith the occasional fine program is periodically smeared with impudent insistence to buy and try.[37]

In the last two decades criticism has continued to parallel the rapid growth of broadcasting, particularly that of the commercial television system. In addition to the often cited statements of Newton Minow on the "vast wasteland"[38] and Spiro Agnew on network "censorship"[39] have come popular accounts that have focused particularly on the commercial basis of broadcasting. Harry Skornia's Television and Society,[40] Les Brown's Television: The Business Behind the Box[41] and Martin Mayer's About Television[42] are good examples of the latter.

Skornia focuses upon what he considers to be a contradiction between profitability and the public interest. He claims that the current system of broadcasting

> is what it is now because this form of broadcasting is most profitable to those who control it, not because it serves the public interest better than, or even as well as, any of a number of alternatives might.[43]

Brown concentrates on what he calls "the Three Rocks" (the three major networks) and argues that their basic function is delivering the masses to advertisers:

> In day-to-day commerce, television is not so much interested in the business of communications as in the business of delivering people to advertisers. People are the merchandise, not the shows. The shows are merely the bait.[44]

Finally, Mayer argues that the system is dominated by what

he calls "the mystical business of selling time."[45]

Criticism of the broadcasting system has not been directed solely at its commercial basis. Much of it has focused upon the regulation of broadcasting and hence the Federal Communications Commission. In fact, the staff of the Hoover Commission concluded that no regulatory agency has been attacked more than the FCC for a failure to do its job effectively.[46] More recently Krasnow and Longley, referring to the FCC, have gone beyond this in stating that "perhaps no other Federal agency has been the subject of as much vilification and prolonged investigation ... ."[47] A brief review of the literauture on the FCC leaves one with the impression that these are perhaps understatements.

A particular focus of this criticism has been on the alleged restrictive influence that organizations such as the FCC have brought to bear on new technologies. This has been noted by Noll in his discussion of FCC responses to innovations in the common carrier field.[48] and by Le Duc in his analysis of cable television. The latter considers this restrictive influence as perhaps an inevitable feature of agencies such as the FCC:

> ... unless any structural bias against technological competition ... is remedied through modification of the agency's regulatory process, each future advance may be foredoomed to a series of restraints no less severe than those already experienced by the cable medium.[49]

Finally, a recent Presidential Council also noted the tendency of the FCC and other regulatory agencies

> to shield all regulated modes often without sufficient assessment of ... efficiency factors that might intrinsically favor one of several modes.[50]

What is the basis of this criticism? Several possibilities are suggested by the literature. One basis upon which the regulation of broadcasting has been subject to critical analysis has been the alleged influence of particular organizations on the regulatory process. Much of the literature on the FCC has concentrated on the extent to which the Commission has supposedly been excessively sympathetic to the interests of the broadcast industry. As early as 1935, Herring conveyed what has become the belief of a good many analysts and critics when he wrote that:

> While talking in terms of the public interest, convenience and necessity, the commission actually chose to further the ends of the commercial broadcasters.[51]

The notion that the broadcasting industry exerts a tremendous influence on the Commission's decision-making has been prominent in three recent analyses. Noll claims that the "FCC's conception of satisfactory public interest goals seems remarkably consistemt with the profitability goals of the broadcaster."[52] This has been echoed by Geller who argues that "the one clear problem that must be faced is agency over-identification with the industries regulated"[53] and by Moore who asserts that "the peculiar vision ... of regulators tends