Cable Television and Telecommunications in Canada
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An Economic Analysis

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Foreword

The significance of cable television and communications satellites is evident from the following proposition: Suppose that the existing over-the-air broadcasting facilities and the existing land-based telephone and telegraph facilities, including microwave and coaxial cable components, were to be eliminated. Then, using cable television and communications satellites, the same services now provided might be performed, probably more efficiently and cheaply than is the case at present.

Cable TV thus is one wing of a seismic structural change in the organizational makeup of the general telecommunications network and broadcasting. It offers potentially an alternative mode for conducting the local exchange (switching) and pick-up and delivery services of both the broadcast and the telephone/telegraph industry. Cable does not threaten the long-haul transmission functions of over-the-air broadcasting and the telephone/telegraph system; communications satellites do that. For they offer an alternative to over-the-air broadcast to thinly populated areas and to long-haul transmission of point-to-point services (telephone, telegraph, computers, and so forth).

A power struggle is taking place between the older and newer institutions. Massive concentrations of politico-economic might are located in the existing over-the-air broadcast industry and in the telephone/telegraph companies. They are defending their positions of power and profitability against the currently weaker concentrations of economic power located in cable and satellites. Government institutions at all geographic levels, the markets for capital and equipment, and the markets for the
end use communications services produced are the chief theatres where the struggle is waged.

Such seismic transformations in the communications structure are not unfamiliar. One should recall the innovation of motion pictures, which built a new industrial complex on the ruins of an older theatrical and music hall structure. A little later the innovation of radio broadcasting, changed, to some extent, the policy and structure of the press, the cinema, and other entertainment industries. The structural shocks created by radio broadcasting were but a prelude to heavier impacts on the same industries by over-the-air TV. The innovation of FM was delayed several decades by the AM broadcast industry's successful defense against it, and then was permitted on condition that FM supplement rather than replace AM. Colour TV, innovated several decades before it otherwise would have been, was the result of a seismic controversy in which the Columbia Broadcasting System forced the issue upon RCA and the rest of the TV equipment industry. The effects of these earlier struggles on the total power structure of North American capitalism were relatively superficial, however, as compared to the long-run potential of the innovation of cable television and communications satellites. For the first time the monopoly heartlands of the telephone/telegraph "common carriers" are threatened by an alternative technology, which they have been powerless to prevent coming into at least token existence. As measured by revenues or assets, the monopoly common carriers enjoy a crushing superiority in strength as compared with the little cable television organizations. AT&T (the world's largest private corporation) and Bell Telephone of Canada are giants as compared with pygmies. In partial alliance with the monopoly common carriers are the over-the-air networks and broadcast stations, whose fantastically large and regular profits and political power in legislatures and governments supplement the defensive strength of the telephone/telegraph monopolies throughout all sections and sectors of the North American order.

There is no basis at present for forecasting either the extent to which cable television may make major inroads into the existing telephone/telegraph and over-the-air broadcast markets and structures, or the timing of such inroads. The battle hardly has been joined. And the flexibility enjoyed by capitalism has the capacity to work out compromises and payoffs which may stave off major structural change for a long time, or perhaps forever, as in the case of the totally rejected innovation of broadcast facsimile. This latter example may be instructive for proponents of cable television to consider. By 1946 it had been well tested both in peacetime and under battle conditions. Pioneered by one of radio's famous inventors, John V. L. Hogan, its patents had expired, and it presented no barrier to entry. It offered the possibility of competitive daily newspapers even in small towns. It required no expensive downtown real estate for newspaper publishing plants, no large investments in printing equipment, and no human delivery system. Economical of space, capital, labour, and spectrum allocation (it can be multiplexed onto a voice FM or AM broadcast channel), it had manifest attractive features. It was authorized by the FCC in the United States, but it was never innovated. It caused no seismic structural struggle or change in the communications system. No effective entrepreneur appeared because, in my opinion, broadcast facsimile presupposed a willingness of industry in general to radically upset the existing newspaper monopolies, broadcast industry, and marketing organizations of consumer goods producers, especially their advertising practices. In other words, broadcast facsimile had powerful enemies but no effective friends.

Cable television and communications satellites do have some advantages in the struggle against the status quo. A necessary, but not in itself overpowering, advantage is the fact that patents and research and development expertise are no longer monopolized by the telephone industry—they are readily accessible to the cable and satellite forces. This situation came about because during the cold war a number of new giant corporations, based originally in the aerospace complex, participated in the development not only of satellites themselves, but also of computers and all of the technical expertise represented by transistors, printed circuitry, and so forth. Moreover, these giant corporations are more or less helpless, in their quest for growth, to support major incursions in the markets of the old telephone/telegraph common carriers. Second, the emerging techniques associated with satellites and cable probably are inherently more efficient and economical. Encumbered with vast and largely obsolescent plant, the telephone/telegraph complex tends to be inefficient, sluggish, and defensive. Third, the technique of cable provides the economic organizations which control it with valuable and free help from a population discontented with centrally managed "mass society."

While the outcome of this structural struggle is indeterminate at present, the hypothetical applications of cable television offer tantalizing possibilities for community and small group control of their own entertainment, information, and political "channels." In this sense cable television is like a Rorschach or TAT test into which individuals and small groups project solutions to their perceived critical problems. All the speculations over what cable "could" or "might" do for individual
and local expression, self-government, autonomy, environmental relations, and so forth, have this character. It has a deep and unpredictable mobilizing power. Such wishful thinking and acting has two possible consequences. If pursued with successful action, even on a small, community scale, it can become a self-fulfilling prophecy. By linking such successful local actions with the "newer" power centres supporting cable and satellite development, it would be a powerful offset to the strength of the telephone/telegraph/over-the-air broadcast complex. That complex, identified as it is with centralized, monolithic structures which purvey mass culture, cannot count on such spontaneous evidence of public support. Instead, it must rely on the strength of its "inner lines" of influence through the government, party, banking, and press institutions. Alternatively, a consequence of the amorphous local enthusiasm for using cable television for innovative purposes can be negative. If the interest in local self-expression and local self-government is frustrated because organizing efforts fail, or because the payoff does not quickly appear, cynicism and resigned submission to centralized, manipulated power may result.

Because Robert Babe's book focuses on the institutions and policies involved in the seismic structural struggle, it should be useful to those who favour grassroots initiatives to assert individual and community autonomy and integrity. As against the clear realism of Dr. Babe's approach, the vaporous views of McLuhanites contribute only confusion and, ultimately, anomie.

Dr. Babe's book makes a valuable contribution by investigating the institutional context in which cable television exists. In Canada, as in the United States, it confronts the over-the-air broadcast industry on the one hand and the common carrier telephone/telegraph complex on the other. But in Canada, overlaid on these relationships, are a hodge-podge of regulatory institutions concerned with cable, broadcasting, and common carriers. The respective roles of provincial and national governments are by no means as clearly defined as in the United States. And at the national level, broadcasting, common carriers, and frequency allocation are regulated by three different government agencies—a situation in which cable television tends to fall between the three stools. There is the further complicating consideration that in Canada substantial public operating enterprises exist together with private enterprises in both the broadcasting and common carrier fields. The power strategies and tactics involved in the cable television context are accordingly extremely flexible and varied. It seems fair to say that cable television policy decisions—and those in broadcasting and common carrier fields as well—are more overtly and fluidly connected with the political processes of parties and government than in the United States. This difference probably is traceable to the differing constitutional systems in the two countries. Like many other differences between the two countries, this one too tends to be obscured by the use of the same language in both countries. Dr. Babe's book assumes this difference, as should its readers. Readers unfamiliar with the Canadian scene may tend to take for granted the wide-ranging data on costs, revenues, and profits of cable television and over-the-air broadcasting which Dr. Babe presents. In fact it is an extraordinary achievement of his to have extracted from the establishment so much information, albeit with due regard to protecting anonymity of confidential information. For it is much more difficult for the public to obtain statistical data of this vital kind in Canada than in the United States. Submissions of data by private corporations to regulatory bodies, even in contested rate proceedings, frequently are cloaked with confidentiality. And regulatory bodies are not constrained to require parties to quasi-legislative-type, rule-making proceedings or to comparative hearing procedures to make publicly available essential information, as is the case with the constraints imposed by the Administrative Procedures Act in the United States. These considerations may explain why it is that while Canada has developed cable television more than any other country, the information publicly available about cable television in Canada has been scanty. In contrast there is a large and rapidly growing literature of public analysis of the political-economic aspects of cable television in the United States. Dr. Babe's initiative and ingenuity in obtaining and organizing this much economic information about the Canadian cable television scene is thus a large first step toward informed public consideration of the politico-economic issues involved. More can and will be done on this in the future, and he has demonstrated some of the ways in which such information can be obtained and analysed. Perhaps this book may encourage Canadian regulatory bodies to require or permit more public disclosure of economic facts which may be expected to contribute to sound policy decision making in a democratic society.

Dallas W. Smythe
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Acknowledgments

Each year the Department of Economics, Michigan State University, nominates a doctoral dissertation for publication by the Division of Research of the Graduate School of Business Administration. I am indeed pleased and honoured that my 1972 dissertation, “The Economics of the Canadian Cable Television Industry,” was so nominated.

While the current study is based on my 1972 thesis, it has undergone significant revisions and expansion since that time. It has benefited from research carried out subsequent to 1972 on behalf of the Department of Consumer, Corporate and Internal Services, Province of Manitoba, and on behalf of Communications Canada.

Publication of the full manuscript would have been beyond the means of the Division of Research were it not for financial help granted the Division by the Canadian Association of Broadcasters, and I would especially like to thank Norman MacDonald of the CAB for his efforts in this regard. Since the study is at times quite critical of the performance of private broadcasters in Canada, it is very much to the credit of the CAB that it would aid in publications with a view to stimulating the free flow of information and analysis.

Appreciation also is extended to the Canada Council, which, through two doctoral fellowships, financed part of the initial research. I also must thank two individuals professionally associated with broadcasting in Canada. Without the help of Thomas Williams, formerly of Bushnell Communications, and John Hagborg of the Canadian Radio-Television
Commission, large portions of the manuscript would have been impossible to write.

I also received material and exchanged ideas with many others in the broadcasting and telecommunications industries. It is impossible to list comprehensively all such individuals here, but special thanks must go to Kenneth J. Goldstein, associate deputy minister of communications, Manitoba; Dennis Wardrop, broadcast industry and government manager, Manitoba Telephone System; Alex Dworkin, vice-president, Community Video, Limited; Kenneth Wyman, director general of environmental policy planning, Communications Canada; and G.D. Zimmerman, former president, IWC Industries. Each of the above contributed significantly in terms of my thinking. Thanks also must go to the faculty and students of the Department of Television and Radio, Michigan State University, in this regard. Anne Cooper of Communications Canada graciously volunteered her talents for the art work.

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Professor Walter Adams chaired the committee. To him I would pay what I believe to be the greatest accolade that can be given a teacher: "By example, by admonition and by the force of his personality and character, he elicited from a great many of his students the very best they were capable of." He certainly elicited my best effort. Thank you.

For all errors and other defects that remain, I accept sole responsibility.
I Introduction

The aims [in establishing a national broadcasting system] have been national survival, whether in English or French Canada or in Canada as a whole; a Canadian sense of identity; national unity; increased understanding between regions and language groups; cultural development; and serving the Canadian economic interest.

In 1935 Graham Spry explained that there were two motives that led to the national motive, and it was predominant. The second motive was the broadcasting legislation of 1932. "The first of these driving motives was free use of broadcasting by all sections of opinion. The positive aspect of the national motive was the use of broadcasting for the development of Canadian national unity, and the negative aspect was the apprehension of American influences upon Canadian nationality, particularly as it concerned public opinion."1

Like Quebec and economic nationalism, communications policy is one of the most widely discussed domestic issues in Canada. All three issues have vital importance for the survival of the nation. The significance of broadcasting in this regard was recognized early.

In fact, it has been said that Canada is a country that "exists by reason of communication."2 But communications in Canada, and in particular broadcast communications, are very difficult and costly. There are several reasons for this. In the first place, the country occupies a land

space of some 3.8 million square miles but has a population of just over 22 million. This makes all forms of communication highly expensive when costs are placed on a per capita basis.

In the second place, Canada's bilingual nature means that the country must support two separate broadcasting systems, increasing costs well beyond the cost of either the French or English service alone.

In the third place, Canada's proximity to the United States and the fact that most of her population lives within one hundred miles of the border and can receive signals from the much wealthier American broadcasting system mean that the small Canadian audience is partly drawn away from the native system. Canadian public policy in connection with broadcasting has reflected a belief that broadcasting has a special significance to the survival of the nation, that broadcasting is not "just another industry" to be governed wholly by the impersonal forces of the marketplace. It has been seen by government as an instrument for implementing the national policy. As the White Paper on Broadcasting stated: "Any statement of policy related to broadcasting in Canada therefore starkly poses this question. How can the people of Canada retain a degree of collective control over the new techniques of electronic communication that will be sufficient to preserve and strengthen the political, social, and economic fabric of Canada, which remains the most important objective of public policy? . . . Broadcasting may well be regarded as the central nervous system of Canadian nationhood."

In a similar vein, the Special Senate Committee on Mass Media reported that "what is at stake then is not only the vigor of our democracy. It also involves the survival of our nationhood: A nation is a collection of people who share common images of themselves. Our love of the land, and our instinctive yearnings for community implant that image in the first place. But it is the media—together with education and the arts—that can make it grow . . . What we are suggesting is that the Canadian media—especially broadcasting—have an interest in and an obligation to promote our oneness from the American reality."

What are the goals set for the Canadian broadcasting system? Part IV of this book explores in some detail the statutory obligations placed upon broadcasters. For present purposes, it seems better to quote from a philosopher of broadcasting, Harry Boyle, the vice-chairman of the Canadian Radio-Television Commission:

By what criteria do we judge the quality of a country's broadcasting? To be good—or even adequate—there must have been a multiplicity of individual organizations serving the whole. There must also be the widest range and variety of programmes offered to listeners and to viewers, and safeguards must be taken against the narrowing imitative process by which so much broadcasting is merely a frantic effort to secure numerically for one set of broadcasters a certain total of audience, ignoring, in effect, all others who remain untouched by the narrow spectrum of the programme fare.

There must be the widest degree of freedom to tell and to show the truth. Fundamental to it all, there must be an attempt to reveal society to itself.

If the three goals for a nation's broadcasting as set out above can be accepted, that is, diversity in programme sources, creative freedom, and relevance to the social situation, one may assess the impact of cable television upon the broadcasting system's ability to fulfill these objectives.

The fact that Canadian nationalism is inseparable from public policy for broadcasting greatly complicates a study of the broadcasting industry. Whereas the usual prescription in economic studies is that public policy should be directed toward the implementation of the maximum degree of competition possible in order that the consumer may be protected, in the broadcasting industry it will be found that uncontrolled competition directs broadcasters' behaviour in a way diametrically opposed to the national policy. If this national policy is to be implemented partially through private broadcasting, the question then becomes: How can government, after partially removing the control factor of competition, direct broadcasters' behaviour in such a way as to implement its national goals while at the same time preserving some vestige of private broadcasting? The answers to this question are not at all clear.

This book is a study of the cable television industry. It is of necessity, then, also a study of the broadcasting industry, since cable television obviously is associated closely with traditional broadcasting.

In addition to cable television's primary function of serving as an alternative (and in some aspects an improved) method of delivering television programming to the home, coaxial cable technology conjures up visions for communications of tomorrow. Due to the great informational capacity of coaxial cable, cable television can transmit any and all information that can be encoded into electronic signals simultaneously


with its transmission of thirty or more television signals. The capacity of a coaxial cable is several hundred times that of the telephone plant, and, as a new telecommunications carrier, CATV offers the promise of more rapid and widespread information distribution. This book, therefore, also is a study of the telecommunications industry, since cable television is intimately connected with this element of Canadian business. It may be noted in passing that telecommunications in Canada also have been instruments of national policy.

What this study attempts to set out is, briefly, the place of cable television in the broadcasting and telecommunications industries—its relations and interrelations with the broadcasters and communications common carriers. Based on the data presented and relationships discovered, the study assesses the probable results of certain public policy alternatives and analyses the benefits and costs of these alternatives.

Part II presents and analyses original data on the costs of cable systems, since it was felt that no policy decisions should be made without a thorough understanding of the cost structure of an industry. Part III investigates the relationship that exists between community antenna television systems and the telecommunications common carriers and examines the potential possessed by CATV for altering the telecommunications environment. Part IV analyses the impact cable television has had and will have upon the broadcasting industry in Canada. In the process of this analysis, it has been found necessary to provide the first systematic analysis of the economics of commercial television broadcasting in Canada, since the impact of cable could not adequately be understood without a detailed knowledge of the television industry itself.

While each of these three parts is self-contained, it is hoped that a synergism has been created by the existence of all three. For example, it may be felt that public policy should be directed toward the encouragement of the expansion of cable television so that it may develop into a wideband communications network in competition with the telephone companies; at the same time it may be felt that public policy should be directed toward discouragement of the growth of cable television, since such growth may threaten the very survival of the Canadian broadcasting system and may erode any further possibility for the development of a uniquely Canadian culture. Reasonable policy conclusions derived by studying either problem in isolation could have undesirable effects on the chances of attaining the other goal. It is hoped that the chances of such an occurrence are less when a comprehensive study is undertaken.
II Introduction and Technology

INTRODUCTION

The costs of establishing and operating cable television systems and, in particular, the extent of economies of scale are important for at least three reasons. First, the Canadian Radio-Television Commission (CRTC) has divided the larger municipalities when granting licences so that some cities have several cable firms within their boundaries, each with an exclusive territory. For instance, metropolitan Toronto has some thirteen cable firms, several of which possess two or three blocks of territory completely isolated from their other territory. This policy of fragmenting areas may make sense if the economies of system size are not large; however, on purely economic grounds, this policy would be inefficient were small systems found to be high cost systems.

Second, by studying the cost structure of cable television firms, one can assess the reasonableness of granting exclusive licences. Exclusive licences normally are given in cases where an industry is felt to be a natural monopoly and competition would cause the weakest firm to fail and/or in cases where duplication of equipment (generally transmission lines) is felt to be economically wasteful. By investigating the capital invested per subscriber for cable systems, the extent of this "waste" may be determined.

Finally, by studying the cost structure of CATV, some conclusions can be reached regarding the feasibility of extending cable service to rural areas. Since CATV at present exists only in urban areas, the data in
the study, which are derived from urban centres, are used to infer the costs of serving rural areas. The question of the viability of CATV in such underpopulated centres is important for at least two reasons.

First, broadcasters often cite the deprivation of service to rural audiences that could result were CATV allowed to grow free from regulatory constraints, since the absence of regulatory control could result in a weakening of the financial solvency of broadcasters, possibly causing some to go out of business. Without the extension of CATV to rural areas, a significant segment of the population might be deprived of television altogether.

Second, some foresee the evolution of cable television into a tele-data processing system. Bell Canada and other telephone companies see this development as a threat to both their present and future services. They claim that unregulated CATV would tend to serve only the lucrative, urban markets while leaving the less profitable rural areas to the common carriers. It is claimed the telecommunication companies need the rich urban centres in order to subsidize their operations in the less profitable rural areas. This "cream-skimming" argument may be partially assessed by examining the economic structure of current community antenna systems.

TECHNOLOGY

A typical cable television system may be divided into three component parts: the head-end, the trunk line, and the distribution system. The head-end consists of antennae, pre-amplifiers, filters, gain control devices, and other electronic equipment. The head-end traps the broadcast signal from off-air, amplifies it, and cleans it up. In some cases the frequency (that is, the channel assignment) is changed for distribution. The trunk line connects the head-end to areas to which the signals are to be distributed. The trunk line carries all the channels that are to be received, and these channels are mixed into one wideband, frequency division, multiplexed system. The distribution system transmits the signals from the trunk line to the television set.

Since television signals weaken when passing down the trunk cable, amplifiers are placed periodically throughout the length of the trunk (typically every 1,500 to 2,200 feet) and are said to be in "cascade." Cascading amplifiers in this way presents problems, however, as shall be seen later.

Attached to the trunk cable are passive (or nonamplifying) devices, such as splitters and taps and couplers, which serve to join the distribution system to the trunk line for example. They tend to weaken the signal.

The transmission line is coaxial cable which is composed of a central copper core and an outer layer of insulating material which, in turn, is surrounded by a metal tube of copper or aluminum serving as a shield to prevent radiation from the cable. Several such copper conductors may be squeezed together into a single coaxial cable (coaxial cable being a generic name); however, this generally is not the case for cable television distribution at the present time.

It is through the technology of coaxial cable that CATV's great potential lies. Cable of the type used in cable television systems has available a frequency range of 0 to 300 MHz. Normal VHF television occupies frequencies between 54–88 MHz and between 174–216 MHz. By allowing a bandwidth of 6 MHz per television channel, it would be theoretically possible to carry fifty video channels on present coaxial cable. Due to technical problems that are difficult and expensive to resolve (such as interference between channels, which need not be adjacent channels), a more realistic figure may be twenty-five to thirty channels. The number of channels easily could be doubled, of course, by simply adding another copper conductor, as well as using more sophisticated methods. In contrast, the usable spectrum of typical copper pair wire as used in telephone loops is about 1 MHz. For each 6 MHz of spectrum (that is, each television channel) generally 600 telephone signals may be accommodated.

When accompanied by switching equipment, the carrying capacity and usages of coaxial cable for telecommunications are practically limitless for purposes in which the transmitting and receiving stations are fixed geographically (that is, for non-mobile communications).

Until quite recently, Canadian cable systems had a maximum capacity of twelve channels. Any limitation on the number of channels carried is not due to the capacity of the coaxial cable itself, but rather of the supporting devices, such as filters, amplifiers, and so forth. Recent CRTC policy has been to approve some twenty channel systems, however, chiefly in the Toronto area, and this would appear to be the direction in which systems in the larger metropolitan areas will move. For example, Keeble Cable Television, cable licensee for part of Mississauga, received CRTC approval to distribute eight Canadian and five American channels in addition to reserving two channels for local origination and information services.1

CATV systems face two major technical limitations: system length and system capacity. System length describes the maximum possible length of trunk cable that can be employed from the head-end that may be maintained without causing undue co-channel interference, which again will harm picture quality. While these two factors at first are treated separately, they interact.

The total length of a trunk cable from the head-end is limited due to the method used in transmitting the signal. Long-haul (microwave) telecommunications systems may be composed of both a receiver and transmitter at each station along the distribution path. In effect, the signal is received and processed and a new identical signal is broadcast. Through this re-creation process the signal integrity can be maintained. With a system of cascaded amplifiers, CATV systems operate on a different and less costly principle. As the signals from the head-end travel down the trunk cable, they become weakened and amplifiers serve to renew them. However, amplifiers find it impossible to distinguish between the desired signal and other noise (interference) elements. Both are amplified at each amplifier. Along the cable length, noise elements are added while the desired signal attenuates. In fact, the amplifiers themselves add noise and may add unwanted distortion of the signal through compression or expansion of the peaks of the wave lengths.

One of the specifications for an adequate picture is the maintenance of a sufficiently high signal-to-noise ratio. Generally, to obtain highest quality reception, a signal-to-noise ratio of 40 dB should be maintained. It becomes increasingly difficult to maintain the desired signal-to-noise ratio for any given head-end output as the system is lengthened.

The obvious solution is to increase the signal level from the head-end before the trunkline amplification process begins. This method will not be successful past certain limits, however, because high signal levels result in distortion due to overload. Overload will be discussed below.

The overall system length that can be achieved will depend upon several factors: the quality of the system's components (since less expensive and poorly installed components add noise), the picture quality the cable operator wishes to maintain at the end of his system, external factors such as the temperature range in the community, and so forth. It is generally felt that 22 dB spacing between amplifiers (or placing the cascaded amplifiers every 1,400 feet for air dielectric cable and every 3,000 to 4,000 feet for air dielectric coaxial cable) gives satisfactory results. At the very maximum, seventy-five amplifiers have been cascaded, giving thirty miles of trunk cable, but normally a maximum of seventeen trunk miles is placed on system length in order to maintain high standards.

It may be well to point out that there is no limit to the number of trunk lines that may be run from the head-end. Were it feasible to erect a head-end in the centre of the city, it would be possible to run trunk lines like spokes in a wheel to all points in the city, covering a radius of seventeen miles from the centre. However, the positioning of the head-end is critical and reception difficulties generally preclude this solution. The largest cable systems (those in Montreal and Vancouver) employ multiple head-end sites.

Cable television systems suffer from a further limitation in addition to that of system length, namely, usable frequency spectrum. Table II-1 shows the allocation of spectrum to television broadcasting.

Table II-1. Allocation of Frequency Spectrum

<table>
<thead>
<tr>
<th>Frequency range (MHz)</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.55 - 1.60</td>
<td>Standard broadcast</td>
</tr>
<tr>
<td>1.60 - 54.0</td>
<td>Marine, aircraft, shortwave, mobile</td>
</tr>
<tr>
<td>54.0 - 88.0</td>
<td>VHF-TV, channels 2 to 6</td>
</tr>
<tr>
<td>88.0 - 108.0</td>
<td>FM radio</td>
</tr>
<tr>
<td>108.0 - 174.0</td>
<td>Aircraft, amateur, mobile</td>
</tr>
<tr>
<td>174.0 - 260.0</td>
<td>VHF-TV, channels 7 to 13</td>
</tr>
<tr>
<td>470.0 - 880.0</td>
<td>UHF-TV, channels 14 to 84</td>
</tr>
</tbody>
</table>


1. The signal-to-noise ratio is the difference between the signal level, measured in dBmV, and the noise level, also measured in dBmV, at any given point in the system. See Simon, Technical Handbook, p. 12. dBmV stands for decibel-millivolts. The signal-to-noise ratio is an expression of the ratio between the strength of the input signal and the strength of the output signal. The dBmV is an expression of the signal strength above a certain standard level, 1 millivolt/70 ohms.


3. The signal-to-noise ratio is the difference between the signal level, measured in dBmV, and the noise level, also measured in dBmV, at any given point in the system. See Simon, Technical Handbook, p. 12. dBmV stands for decibel-millivolts. The signal-to-noise ratio is an expression of the ratio between the strength of the input signal and the strength of the output signal. The dBmV is an expression of the signal strength above a certain standard level, 1 millivolt/70 ohms.

Technology

Cost Analysis of Cable Television

Figure 11-1. Cable Systems and Licensed Areas in Metropolitan Toronto, 1972

It will be noted that a large gap exists between the frequencies allocated to the low band VHF channels (channels 2 through 6) and the high band (7 through 13). These bands were chosen in deference to the second harmonics distortion of television channels. Whenever more than one television channel is receivable in an area (or is being carried on a cable), the signals will interact to produce new signals at certain frequencies differing from the original frequencies: new signals will be produced at the frequency which is the sum of the two original frequencies, at the frequency which is the difference of the two original frequencies, and also at frequencies which are twice each of the original frequencies. The standard channel frequency assignment is such that "if one takes any pair of picture carrier frequencies in the standard 12-channel assignments, their sum or difference does not fall in any of those channels." In fact, such unwanted signals resulting from this "second-order distortion" fall below and between the bands. However, were a cable television system attempting to increase the number of channels on the system by adding channels at midband (that is, between channels 6 and 7), it would run into all the difficulties described above.

Third-order distortion, or cross-modulation, presents a serious problem for CATV systems and forces a trade-off between the number of channels carried and the length of the system. While some components of third-order distortion fall at new frequencies in a manner similar to second-order distortion, cross-modulation, a particular type of third-order distortion, results in disturbances at the original frequencies ("the windshield wiping effect"). Cross-modulation results from the transference of variations or modulations from one channel to all other channels going through the same amplifier. "When this form of distortion is present, the modulation of an undesired interfering signal appears as modulation of the desired signal, and it can in no way be separated from the desired modulation... . Cross-modulation products are proportional to the square of the signal levels." When such cross-modulation causes a substantial deterioration in picture quality, overload has occurred.

To summarize, the greater the number of channels being carried, the greater the number of cross-modulation products. The lower the signal level of these channels passing through the amplifiers, the lower the levels of the cross-modulation products, and hence the greater the number of channels that may be carried. However, this decreases the signal-to-noise ratio and in turn decreases system length. In addition, cross-modulation increases as the number of amplifiers in cascade increases (that is, as the length of the system increases), which further limits the length of the system.

One further point should be made regarding the number of channels that may be carried on a CATV system. Technology has limited the usable spectrum of coaxial cable to below the 300 MHz range, which means that the UHF channel frequencies cannot be used on coaxial cable since the signals at these frequencies attenuate too quickly. For this

6. Rheinfelder, CATV Engineering, p. 43.

reason, off-air UHF channels that are carried on cable systems generally first are converted to VHF frequencies.

The above is not intended to disparage cable as a potential multi-channel carrier. More channels may be added by carrying some at the mid-band and other nonbroadcast frequencies, while not carrying channels at the normal broadcast frequencies. Similarly, much depends upon the quality of the amplifiers and technical improvements in them. The above serves only to show that as a CATV system's length is increased past a certain point, costs theoretically will increase at a faster rate than system size if the system's performance is to be maintained, and this fact has implications for optimal system size.

III Cost Analysis

It is possible to test the theoretical (technological) reasons for believing that cable television systems will face diseconomies of scale at some point by studying data based on a sample of Canadian cable television systems. As the data used below were obtained on a confidential basis, the source of and the operations described by them are not revealed. In these data it will be found that the sample of cable systems changes somewhat when different aspects of cable costs are being studied. This is due to the fact that the data describing the operations of some of the systems were incomplete, and therefore such systems had to be dropped from the sample for particular purposes and were added again for others. Throughout, however, I have been consistent in assigning a particular letter for each system in the sample.

There are three basic measures of system size: miles of cable plant, number of households passed by the cable system (or number of potential subscribers), and number of subscribers to the system. Each measure has problems associated with it.

CAPITAL COSTS PER MILE OF PLANT

Two areas require clarification before analysing capital costs as a function of system length: leaseback contracts and capitalization policies.

Cost Analysis of Cable Television

Leaseback Contracts

Cable television firms often find it necessary to use telephone poles in constructing the cable systems and generally are prohibited by the telephone companies from owning the coaxial cable in their systems if they proceed to lease space on the telephone poles. While CATV firms do retain ownership of the electronic equipment (amplifiers) and house drops, the telephone companies require cable firms to pay for the cable and the construction costs of building the system while retaining ownership. The cable companies then lease back the coaxial cable component of the system from the telephone companies. Contracts of this sort (called "leasebacks" or "partial system agreements") generally have a ten-year life and are subject to renewal. Thus, the house drops are submerged into a broader asset category such as "distribution line and equipment," the current number of subscribers to the CATV system is multiplied by $22, and this amount is subtracted from the total assets.

A third difficulty has presented problems with which it has not been possible to cope adequately. Apparently it is the practice of some CATV operators to retain undepreciated, obsolete assets in their balance sheets, even after the systems, or parts of the systems, have been rebuilt. It was impossible to obtain information regarding the significance of this possibility for some of the systems in the sample used. If such practice is prevalent among such systems, costs will be inflated, and the reliability of the results presented below will be reduced. This problem does not appear to be so widespread as to be of great importance, however.

Based on a sample of seventeen observations, Figure III-1 depicts the relationship between system length and fixed investment. Figure III-1 (and Table III-3 from which the figure is derived), current assets (cash, accounts receivable, and inventory) are not included. "Goodwill" is not included, and, in addition, no account has been taken of accumulated depreciation, as all assets are valued at original cost. Depreciation will be treated later.

Even without adjusting the figures for the four companies for whom the head-end costs were not included (companies A, H, J, and L), Figure III-1 shows a sharp upward trend in average fixed capital invested per mile as the size of the system increases. Those firms with less than 250 miles of distribution cable tend on average to have $4,500 to $6,000 invested per mile of plant, while firms with over 300 miles of distribution cable tend to have invested between $7,500 and $10,000 per mile of plant. These data support the theoretical reasoning given in Chapter II and indicate strong diseconomies of scale.
Figure III-1. Fixed Assets per Mile of Plant, Various CATV Systems

Source: Table III-3.
Note: O Head-end omitted.

OPERATING COSTS AND DEPRECIATION PER MILE OF PLANT

In Figure III-2 an operating cost summary for a sample of CATV firms is given with costs being placed on a per mile of plant basis. For several firms, such costs are included for two years of operation.

Once again, for companies who expensed drop costs as they occurred rather than capitalizing and depreciating them over a period of five years, an estimate of $22 for each such drop has been made, and $22 times the number of new subscribers in the year was deducted from operating expenditures before the per mile calculations were made.

In the figure both a continuous and discontinuous function are depicted. By inspecting the continuous function it will be noted that a U-shaped cost curve best depicts the relationship between operating costs per mile and system length. Average costs appear to decline rapidly as systems grow from 18 miles to about 250 miles, and thereafter rise at a leisurely rate. If a discontinuous function is chosen, average operating costs fall quickly for system sizes up to 150 miles of plant, and there is a jump upward for systems larger than 150 miles of plant; costs then continue to rise for plants of still greater size. It may be concluded that all operating economies appear to be exhausted at 150 to 300 miles of plant, and systems of larger size face higher operating expenses per mile.

Before integrating these results with the previously derived data on fixed investment per mile, it will be necessary to discuss briefly depreciation rates and policies. Due to the time value of money, it is advantageous for business firms to postpone payments of corporate income tax as far into the future as possible. By using accelerated depreciation rates, which need bear little or no relation to actual (estimated) capital life, firms are able to incur large paper losses in early years; these losses then may be applied to earnings in future years to reduce taxable income once more.

Table III-1 shows permissible depreciation rates for tax purposes for various asset categories and, for comparison, the estimated actual depreciation rates for these assets based on the useful life of the asset. The
The problem involved in using actual depreciation allowances used in the CATV financial statements is that it is impossible to separate out the influence of the revenue side. In attempting to find an optimal size of CATV plant from a cost efficiency point of view, it is desirable to abstract from drop costs. Similarly, it will be necessary to use a dummy depreciation rate for the same reasons.

A second difficulty that would arise from using the actual depreciation rates employed by the individual firms is that this practice invariably would bias the results in favour of the older firms. Under a declining balance method of depreciation, older firms which already had exhausted a good deal of their depreciation reserve would appear to be low cost firms because of the lessened depreciation charges. The problem would not take on the same importance in established industries, but for a comparatively new industry like CATV, where some of the firms are very new and where many of the older firms recently have expanded their equipment into new areas, it would bias the results to a very great extent to use depreciation figures from the books of the cable companies.

In order to determine the "true" depreciation rate of cable television systems, the following calculations were made: (1) For five "typical" cable systems, the relative size of each of the asset categories was determined. For example, vehicles averaged about 3 percent of total assets for the five systems. (2) The relative size of each asset category was multiplied by the estimated "true" depreciation rate for that category. (3) The above products for all asset categories were summed, giving a theoretical overall depreciation rate for each system.

These calculations are shown in Table III-2. The overall rates for the five systems range from 9.6 percent to 10.1 percent with a mean of 9.8 percent. Therefore, in the analysis that follows, it is assumed that a 10 percent rate of depreciation for the fixed assets of entire CATV systems is a reasonable figure. A 10 percent rate of depreciation for a cable television system probably will be somewhat on the low side due to the rates of technical advance and obsolescence. However, given the strong diseconomies resulting from large systems (as developed in Figure III-1), by using the lower bound of depreciation rates, any conclusions regarding diseconomies of large scale will be much stronger, since the faster the fixed assets must be written off, the more important will become the fact that large systems tend to invest more heavily per mile of system length.

To the average operating costs per mile of plant shown in Figure III-2, the estimated "true" depreciation costs are added, as found by taking 10 percent of the total fixed assets (excluding capitalized drops). These results, which are shown in the final column of Table III-3, give the average cost per mile of cable television systems of various sizes for one year of operation. The results of Table III-3 are depicted graphically in Figure III-3. It is apparent that the expected diseconomies of scale occur fairly early (at about 200 miles).

By studying the distribution of costs in Figure III-3, it is possible to...
distinguish three categories of firm size: (1) systems of 50 to 100 miles in length, which average around $1,700 per mile in total annual costs; (2) systems of 150 to 400 miles in length, which average $2,300 per mile in total annual costs; and (3) systems over 600 miles in length, which average $2,900 in costs per mile. The single system of less than 50 miles per plant was a relatively high cost firm. On the basis of the data presented, it is clear that whatever economies that may exist for cable television systems are exhausted early and large firms are relatively disadvantaged.

Cost Analysis

Figure III-3. Average Total Costs per Mile of CATV System Length (1967-1970)

<table>
<thead>
<tr>
<th>Miles of cable</th>
<th>Costs per mile (thous. $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1.5</td>
</tr>
<tr>
<td>100</td>
<td>1.9</td>
</tr>
<tr>
<td>200</td>
<td>2.3</td>
</tr>
<tr>
<td>300</td>
<td>2.7</td>
</tr>
<tr>
<td>400</td>
<td>3.0</td>
</tr>
<tr>
<td>500</td>
<td>3.3</td>
</tr>
<tr>
<td>600</td>
<td>3.5</td>
</tr>
<tr>
<td>700</td>
<td>3.8</td>
</tr>
<tr>
<td>800</td>
<td>4.0</td>
</tr>
<tr>
<td>900</td>
<td>4.2</td>
</tr>
<tr>
<td>1000</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Source: Table III-3.

Note: Head-end omitted.
### Cost Analysis of Cable Television

#### Table III-4: Total Annual Cost per Mile, Sample of Thirteen CATV Systems

<table>
<thead>
<tr>
<th>Miles of cable plant</th>
<th>Operating cost per potential subscriber ($/PSS)</th>
<th>Total cost per subscriber ($/PSS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1968</td>
<td>1969</td>
</tr>
<tr>
<td></td>
<td>16 months</td>
<td>18 months</td>
</tr>
<tr>
<td></td>
<td>18.05</td>
<td>18.13</td>
</tr>
<tr>
<td></td>
<td>1,363.00</td>
<td>1,372.60</td>
</tr>
<tr>
<td></td>
<td>500.20</td>
<td>500.07</td>
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<tr>
<td></td>
<td>2,863.53</td>
<td>2,873.50</td>
</tr>
<tr>
<td></td>
<td>569.99</td>
<td>569.99</td>
</tr>
<tr>
<td></td>
<td>1,626.14</td>
<td>1,626.14</td>
</tr>
<tr>
<td></td>
<td>755.71</td>
<td>755.71</td>
</tr>
<tr>
<td></td>
<td>1,327.75</td>
<td>1,327.75</td>
</tr>
<tr>
<td></td>
<td>608.82</td>
<td>608.82</td>
</tr>
<tr>
<td></td>
<td>2,435.84</td>
<td>2,435.84</td>
</tr>
<tr>
<td></td>
<td>624.83</td>
<td>624.83</td>
</tr>
<tr>
<td></td>
<td>1,814.85</td>
<td>1,814.85</td>
</tr>
<tr>
<td></td>
<td>716.86</td>
<td>716.86</td>
</tr>
<tr>
<td></td>
<td>2,493.57</td>
<td>2,493.57</td>
</tr>
<tr>
<td></td>
<td>594.07</td>
<td>594.07</td>
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<td>1,938.27</td>
<td>1,938.27</td>
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<td>793.57</td>
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<td>1,073.48</td>
<td>1,073.48</td>
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<td>2,941.17</td>
<td>2,941.17</td>
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<td>1,253.38</td>
<td>1,253.38</td>
</tr>
<tr>
<td></td>
<td>1,709.00</td>
<td>1,709.00</td>
</tr>
</tbody>
</table>

Source: Confidential. *1969 operating costs; 1969 depreciation. However, miles of plant constant for three years. 15.

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are weaker measures of system size for determining the extent of possible economies of scale than is miles of plant. However, for purposes of discussing the desirability of over-wiring and the feasibility of extending cable to rural areas, these measures are very useful.

As a measure of system size, the number of subscribers suffers severe limitations. In the first place, the number of subscribers will depend upon the length of time the system has been operating. In addition, the number of subscribers to a system will depend upon many exogenous factors, such as the number of signals and diversity of signals obtainable off-the-air as compared to the number and diversity of channels carried on the cable; the average disposable income of the area served; and demographic variables such as the degree of urbanization, number of competing entertainment outlets, and population.

Similarly, the number of potential subscribers is a poorer measure of system size than miles of plant. Miles of plant, unlike the number of households passed, has the effect of removing the exogenous variable population density from the measure of system size. In other words, miles of plant provides a fairly constant yardstick for all systems; there are fewer exogenous factors to be accounted for in comparing particular systems.

Data regarding costs per potential subscriber are given in Table III-4. Figure III-4 is derived from Table III-4 and shows fixed investment per potential subscriber for three classes of system penetration (low penetration of 0–40 percent; medium, 30–60 percent; and high, 50–100 percent). The shapes of these three curves are quite similar: all slope downward to the right at small plant sizes; all appear to flatten out at around 40,000 potential subscribers; and, in cases in which there is a low to medium penetration (for systems greater in size than 40,000 potential subscribers), total fixed investment in the system is only $25 to $28 times the number of potential subscribers. For highly penetrated systems, investment costs are somewhat higher for large systems, averaging $25 to $40 per potential subscriber.

It then appears that for cable systems beyond a certain size (30,000 to 40,000 potential subscribers), the amount of fixed investment per potential subscriber is fairly independent of the size of the system. Economies of scale do seem to exist for all firms smaller than this size, however. It may be added that 40,000 potential subscribers is roughly equivalent to 180 miles of cable.

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3. Wage rates, telephone company policies in the area, altitude of the municipality, and residential versus commercial regions, for example, are factors to be considered, however.
Table III-4. Costs per Potential Subscriber, Sample of Eighteen CATV Systems

<table>
<thead>
<tr>
<th>Cable system</th>
<th>Year</th>
<th>Miles of cable plant</th>
<th>Number of potential subscribers</th>
<th>Percentage penetration</th>
<th>Household per mile of cable</th>
<th>Average fixed investment per potential subscriber ($/10% of pre-subscriber ceding column) ($)</th>
<th>Annual &quot;true&quot; depreciation per potential subscriber (%)</th>
<th>Average operating costs per potential subscriber ($)</th>
<th>Total cost per potential subscriber ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1968</td>
<td>18</td>
<td>985</td>
<td>81</td>
<td>54.7</td>
<td>91.44</td>
<td>9.14</td>
<td>37.89</td>
<td>47.03</td>
</tr>
<tr>
<td>A</td>
<td>1969</td>
<td>18</td>
<td>992</td>
<td>88</td>
<td>55.1</td>
<td>90.79</td>
<td>9.08</td>
<td>37.10</td>
<td>46.18</td>
</tr>
<tr>
<td>B</td>
<td>1969</td>
<td>74</td>
<td>6,178</td>
<td>54</td>
<td>83.5</td>
<td>61.12</td>
<td>6.12</td>
<td>12.96</td>
<td>19.08</td>
</tr>
<tr>
<td>B</td>
<td>1968</td>
<td>55</td>
<td>5,980</td>
<td>40</td>
<td>108.7</td>
<td>52.15</td>
<td>5.22</td>
<td>12.53</td>
<td>17.75</td>
</tr>
<tr>
<td>C</td>
<td>1968</td>
<td>nk</td>
<td>6,500</td>
<td>67</td>
<td>nk</td>
<td>nk</td>
<td>nk</td>
<td>12.72</td>
<td>nk</td>
</tr>
<tr>
<td>C</td>
<td>1969</td>
<td>75</td>
<td>7,000</td>
<td>71</td>
<td>93.3</td>
<td>33.41</td>
<td>3.34</td>
<td>13.37</td>
<td>16.71</td>
</tr>
<tr>
<td>D</td>
<td>1970</td>
<td>89</td>
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Source: Confidential.

Note: Penetration equals subscribers divided by households passed by cable.

nk: Not known.
Figure III-4. Investment per Potential Subscriber, by Level of Penetration

Cost Analysis of Cable Television

Figure III-5, also derived from Table III-4, shows the average fixed investment per potential subscriber as a function of the average number of potential subscribers per mile of CATV plant. From Figure III-5 it is obvious that a high density of potential subscribers per mile will afford cable television companies substantial cost savings. These results are significant, not only because they help explain the unexpected behaviour of the average fixed assets curve when measured on a potential subscriber basis, but also because they will have implications with regard to the desirability of over-wiring areas.

By having such an impact in lowering average capital requirements, a high penetration of cable subscribers appears necessary for efficiency. For an average system with 100 potential subscribers per mile, the introduction of a second cable system covering the same area would raise the expected amount invested per potential subscriber from about $52 to over $90, assuming each company was equally attractive to potential subscribers. The results are not so dramatic for the largest systems, for cable systems with 400 potential subscribers per mile of plant, the effect of the introduction of a second cable company would be to raise investment from $25 to $33 per potential subscriber. The likelihood that both firms would remain in operation if such over-wiring took place may be questioned. This point will be addressed more fully below.

Attention is now focused on costs per actual subscriber. In spite of the reservations given above regarding the suitability of this as a measure of system size, cost per subscriber does possess one inherent advantage—it allows one to see how costs vary when a system's capacity is underutilized. This measure also is useful when one wishes to view the profitability of cable operations.

Table III-5 refers to cost data per subscriber for a sample of twenty-three systems. Since subscriber drop costs vary directly with the number of subscribers, drop costs are included (for the first time) under the column “Investment per subscriber” and these charges are reflected in "Annual 'true' depreciation per subscriber" and "Total costs per subscriber." Once again, in calculating depreciation charges, a 10 percent rate is used for all assets except house drops. House drops are depreci-
### Table III-5. Costs per Subscriber for Sample of Twenty-Three CATV Systems

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Source: Confidential.

nk: Not known.
Selling and administrative costs together account for much of the downward slope in the average cost versus percentage penetration curve, the other components of average cost (technical and depreciation) being fairly constant per subscriber. Of the administrative costs the largest component, salaries and benefits, is also quite constant, running generally between $3.50 and $4.50 per subscriber. This is exactly what one would expect since salaries are highly divisible, whereas the other administrative costs are more of a lump sum nature.

There is no ready explanation for the apparent overall constancy of technical costs. They do appear to decline slightly per subscriber as penetration increases (and, it should be added, they show a much higher variance than either selling or administrative costs, perhaps reflecting the variation in two factors—length of the systems and special conditions peculiar to the municipalities in which the systems are located, such as weather conditions).

Depreciation charges are fairly constant overall, except at penetrations of less than 20 percent where the amounts invested per subscriber are substantially greater than at higher penetrations. The reason for this cost pattern is quite clear. At low penetrations, the capitalized drop charges relatively are less important, and the other capital costs must be spread over fewer subscribers. As penetration increases, these house connections become more important; since they have been treated as a constant cost per unit for all systems, and because they are depreciated at twice the rate of the other assets, drop costs form a more and more important portion of total costs as larger systems are studied, even though they are constant from system to system.

In discussing total costs per subscriber for CATV systems of different penetrations, it is again convenient to think of three classes of CATV systems rather than use the smooth downward sloping curve of Figure III-6.

The low penetration firms, those with 30 percent or less of the available households wired for cable, are very much disadvantaged, and their total yearly costs per subscriber will run between $75 and $40—the firms with the lowest penetration in this category approaching the upper boundary.

Firms with over 30 percent but less than 50 percent penetration face costs ranging around the lower boundary of the low penetration firms ($35 to $50). Firms with high penetration are the low cost firms with costs ranging from $25 to $45 per subscriber.
SUMMARY OF FINDINGS OF THE COMPLETE COST STUDY

While some data and analysis have been reserved for Appendix A, it is convenient to summarize the major conclusions of the cost study.

1. Fixed investment per mile of CATV plant increases (although probably at a decreasing rate) as the size of the cable system grows. Firms with less than 250 miles of distribution cable tend on average to have $4,000 to $6,000 invested per mile (exclusive of capitalized drops), while firms with over 300 miles tend to have $7,500 to $10,000 invested per mile of plant.

2. Fixed investment per household passed by the cable (potential subscribers) falls off sharply as systems grow from very small sizes to system sizes of about 30,000 potential subscribers. Thereafter investment for each such potential subscriber (exclusive of drop charges) is quite constant for all system sizes, amounting to $25 to $30.

3. Fixed investment per potential subscriber declines rapidly as population density rises and tends to approach a constant level of $35 when the number of households per mile of cable reaches 150. Systems with less than 150 potential subscribers per mile of cable face substantially higher costs per household passed. For example, systems with 80 households per mile require a fixed investment of over $50 per potential subscriber (drop costs excluded).

4. In order to obtain the lowest possible investment per subscriber, it appears necessary to obtain a penetration of over 50 percent of the households passed, in which case such investment amounts to $70 to $80, including drops. For systems with lower penetrations, such investment per subscriber varies between $140 and $160.

5. Operating costs, excluding depreciation, tend to fall as the system grows when measured on an average per mile basis, but only up to plant sizes of about 200 miles. When attention is paid to plants longer than 150 to 200 miles, one finds substantial diseconomies, with operating costs ranging from $1,800 to $2,000 per mile for systems with 700 miles compared to $1,200 to $1,400 for systems between 150 and 200 miles.

6. By admitting depreciation allowances into operating costs, and at the same time ignoring uneconomically small plants of under 40 miles of cable, one finds that costs per mile rise continuously as successively larger CATV systems are studied. Yearly expenses average $1,450 to $1,800 per mile for small systems of 50 to 100 miles of cable, and $2,500 to $3,200 for systems over 600 miles. Systems falling between these system sizes tend to face costs between these extremes. Systems under 40 miles of plant appear to be very high cost firms.

7. CATV systems face constant costs per potential subscriber for systems over 25,000 to 30,000 potential subscribers. The situation does not change when depreciation allowances are added to operating costs. However, one may question the suitability of using number of potential subscribers as a measure of the size of the system.

8. Operating costs per subscriber reach a minimum of $18 to $27 when the CATV system has attracted at least 30 percent of the households passed to the system. For systems with less than this minimum penetration, operating costs per subscriber rise rapidly, generally being at a level of $40 when penetration declines to 10 to 15 percent. Although there is much variation among firms with similar penetrations, it appears that when depreciation charges are included in operating costs a minimum of 55 percent penetration is necessary for low costs per subscriber, and evidence exists that for higher penetration these costs will continue to decline.4

4 A Ph.D. thesis concludes that CATV suffers from diseconomies of scale. Utilizing a sample of 148 cable systems, Leonard Good attempts to estimate average and marginal costs per subscriber and per mile of plant. A sample of his results is given below:

Operating expenses = 25.99 + 17.33 (number of subscribers) + 0.11 (subscribers)3 + 0.0008 (subscribers)3 + 104 (dummy for microwave) = 0.0000015 (cable miles)3

Depreciation = 28.26 - 0.096 (cable miles) + 0.0028 (cable miles)1 - 0.0000015 (cable miles)3

These regressions predict average total cost per cable mile will be at a minimum for systems of 70 miles, and such costs will increase rapidly with system size over 70 miles in length. Average costs per subscriber are found to decline for systems of up to 100,000 subscribers.

The author concludes: "On the basis of the above it appears that an optimal sized cable system is one which has about 100,000 subscribers and 70 miles of cable. Unfortunately, the density of homes per cable mile implied by the subscriber and cable miles figures makes it an unlikely combination." Leonard Good, "An Economic Model of the Canadian Cable Television Industry and the Effects of CRTC Regulation" (Ph.D. thesis, University of Western Ontario, 1974), pp. 69-74.
Appendix A

Additional Cost Data

ECONOMIES OF INCREASING PENETRATION

In discussing the effects of increased penetration upon costs and the impact this relationship would have on the feasibility of over-wiring areas, a graph was presented in chapter III showing how costs per subscriber fell with increasing penetration (see Figure III-6). Similarly, Figure A-1 now depicts the rapid decline in investment per subscriber as the penetration for two cable firms grows through a time span of four years. The data supporting this figure are given in Table A-1. The figure supports the conclusion arrived at earlier that a 55 to 60 percent penetration appears to be necessary for lowest costs per potential subscriber. This observation will support conclusions reached in chapter IV regarding the inadvisability of over-wiring.

A FURTHER BREAK-DOWN OF COST DATA

In this section a series of tables is presented which give a more complete break-down of cost data given previously in chapter III.

Table A-2 shows fixed investment per mile by the components of fixed investment for five cable systems, while Table A-3 breaks down operating costs into selling costs, administrative costs, and technical costs per mile, and into further subcategories under these three headings for sixteen cable systems.

Table A-4 gives fixed investment costs per potential subscriber by component costs, while Table A-5 details annual total costs per subscriber for nineteen observations.
Table A-1.  Assets per Subscriber Through Time for Rising Penetration Ratios for two CATV Systems, 1967-1970
(Drop costs included)

<table>
<thead>
<tr>
<th>Firm X</th>
<th>Year (percentage penetration)</th>
<th>1970 (21)</th>
<th>1969 (17)</th>
<th>1968 (12)</th>
<th>1967 (9)</th>
</tr>
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<tbody>
<tr>
<td>Asset</td>
<td>Tower, distribution system</td>
<td>$156,662</td>
<td>$230,023</td>
<td>$269,697</td>
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<tr>
<td></td>
<td>Tools, test equipment</td>
<td>1,886</td>
<td>2,092</td>
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<td>0,986</td>
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<td>1,380</td>
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<td>Trucks</td>
<td>0,021</td>
<td>0,781</td>
<td>0,900</td>
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<td>Pole rights</td>
<td>3,558</td>
<td>5,060</td>
<td>6,902</td>
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<tr>
<td></td>
<td>Land</td>
<td>0</td>
<td>0,163</td>
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<tr>
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<td>Total</td>
<td>$137,552</td>
<td>$162,913</td>
<td>$239,328</td>
<td>$281,391</td>
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</table>

<table>
<thead>
<tr>
<th>Firm Y</th>
<th>Year (percentage penetration)</th>
<th>1970 (63)</th>
<th>1969 (54)</th>
<th>1968 (34)</th>
<th>1967 (19)</th>
</tr>
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<td>Asset</td>
<td>Cable and electronics</td>
<td>$36,928</td>
<td>$39,183</td>
<td>$53,614</td>
<td>$114,467</td>
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<td>Antennae</td>
<td>2,622</td>
<td>3,146</td>
<td>5,253</td>
<td>25,841</td>
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<td>Drop connections</td>
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<td>28,547</td>
<td>34,610</td>
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<td>Office and equipment</td>
<td>1,392</td>
<td>1,591</td>
<td>2,426</td>
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<td>Trucks</td>
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<td>1,336</td>
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<td>4,070</td>
<td>3,404</td>
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<td>$74,093</td>
<td>$77,153</td>
<td>$103,044</td>
<td>$202,328</td>
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</table>

SOURCE: Confidential.

Table A-2.  Fixed Cost per Mile of Plant for Five CATV Systems, 1969
(Drop costs excluded)

<table>
<thead>
<tr>
<th>System (Miles of plant)</th>
<th>E (150)</th>
<th>F (180)</th>
<th>G (256)</th>
<th>H (300)</th>
<th>J (472)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>1. Distribution line equipment</td>
<td>$2154,080</td>
<td>$2714,989</td>
<td>$1855,371</td>
<td>(included in item 2)</td>
<td>(included in item 2)</td>
</tr>
<tr>
<td>2. Main distribution cable</td>
<td>$2901,667</td>
<td>$2245,294</td>
<td>$2576,918</td>
<td>$3349,346</td>
<td>$3700,051</td>
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<td>3. Test equipment</td>
<td>$127,217</td>
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<td></td>
<td>83,145</td>
<td>73,912</td>
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<td>4. Antennae, head-end site</td>
<td>$140,213</td>
<td>$1280,861</td>
<td>$504,873</td>
<td>antenna leased</td>
<td>antenna leased</td>
</tr>
<tr>
<td>5. Office and equipment</td>
<td>$68,333</td>
<td>$59,189</td>
<td>$154,215</td>
<td>$216,610</td>
<td>$79,983</td>
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<td>6. Trucks</td>
<td>$131,606</td>
<td>$73,850</td>
<td>$124,297</td>
<td>$184,374</td>
<td>$21,506</td>
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<tr>
<td>7. Buildings</td>
<td>$9,405</td>
<td>$44,156</td>
<td>$17,244</td>
<td>7,479</td>
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<tr>
<td>8. Land</td>
<td>$121,371</td>
<td>$31,794</td>
<td></td>
<td>95,000</td>
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<tr>
<td>9. Other (studio, lease improvements, etc.)</td>
<td>$11,523</td>
<td>$25,980</td>
<td>$10,462</td>
<td>57,738</td>
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<tr>
<td>Total</td>
<td>$5538,198</td>
<td>$5578,350</td>
<td>$5345,656</td>
<td>$6016,387</td>
<td>$3940,669</td>
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</table>

SOURCE: Confidential.

1 1970 costs.
### Table A-3
### Cost Analysis of CATV Television

#### Operating costs per mile ($)

**System (Miles of plant)**

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<tr>
<th></th>
<th>A (18)</th>
<th>P (57)</th>
<th>R (60)</th>
<th>B (74)</th>
<th>C (75)</th>
<th>E (150)</th>
<th>F (159)</th>
<th>T (180)</th>
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<tbody>
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<td><strong>Operating costs per mile ($)</strong></td>
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<tr>
<td>1.</td>
<td>Sales commissions</td>
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<tr>
<td>2.</td>
<td>Advertising</td>
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<td>Administration:</td>
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<tr>
<td>3.</td>
<td>Salaries, benefits</td>
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<tr>
<td>4.</td>
<td>Travel</td>
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<td>5.</td>
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<td>6.</td>
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<td>7.</td>
<td>Office and shop</td>
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<td>8.</td>
<td>Legal and audit</td>
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<td>Freight, vehicles</td>
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<td>14.</td>
<td>Pole rental, system leasing</td>
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**Average technical costs**

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<th>H (200)</th>
<th>G (256)</th>
<th>I (380)</th>
<th>J (472)</th>
<th>S (496)</th>
<th>K (700)</th>
<th>L (700)</th>
<th>M-M-1968 (1000)</th>
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<td>Selling costs:</td>
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<tr>
<td>1.</td>
<td>Sales commissions</td>
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<td>Office and shop</td>
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<td>Pole rental, system leasing</td>
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**Average technical costs**

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<th>41</th>
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</tbody>
</table>

**Source:** Confidential.
Table A-4. Assets per Potential Subscriber for Selected CATV Systems, 1969
(Drop costs excluded)

<table>
<thead>
<tr>
<th>System</th>
<th>Potential subscribers</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>J</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>14,400</td>
<td>42,500</td>
<td>45,725</td>
<td>62,700</td>
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<td>Asset</td>
<td>(included in item 2)</td>
<td>$25,916</td>
<td>$11,499</td>
<td>$10,388</td>
<td>$13,777</td>
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</tr>
<tr>
<td>1. Distribution line equipment</td>
<td>$25,916</td>
<td>$11,499</td>
<td>$10,388</td>
<td>$13,777</td>
<td>$113,777</td>
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</tr>
<tr>
<td>2. Main distribution cable</td>
<td>30,226</td>
<td>9,514</td>
<td>14,427</td>
<td>27,854</td>
<td>17,000</td>
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</tr>
<tr>
<td>3. Test equipment</td>
<td>0.539</td>
<td>0.559</td>
<td>0.696</td>
<td>0.162</td>
<td>0.509</td>
<td></td>
</tr>
<tr>
<td>4. Antennae, head-end site</td>
<td>1.461</td>
<td>5.425</td>
<td>1.707</td>
<td>0.602</td>
<td>0.070</td>
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</tr>
<tr>
<td>5. Office and equipment</td>
<td>0.712</td>
<td>0.251</td>
<td>0.863</td>
<td>0.602</td>
<td>0.070</td>
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</tr>
<tr>
<td>6. Trucks</td>
<td>1.371</td>
<td>0.322</td>
<td>0.322</td>
<td>0.602</td>
<td>0.070</td>
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<td>7. Buildings, land</td>
<td>1.362</td>
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<td>8. Other</td>
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Source: Confidential.


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<td>0.610</td>
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<td>9. Data processing</td>
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<td>15. Office, shop</td>
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<td>2. 20% rate for drops</td>
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<td>4.000</td>
<td>4.000</td>
<td>4.000</td>
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### Table A-5—Continued

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</thead>
<tbody>
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<td>(Percentage penetration)</td>
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<td>[50]</td>
<td>[54]</td>
<td>[54]</td>
<td>[55]</td>
<td>[58]</td>
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</table>

Operating costs per subscriber ($):  

**Selling costs:**  
1. Sales commissions  
2. Advertising  
3. Travel  
4. Insurance  
5. Salaries, benefits  
6. Telephone, telegraph  
7. Office, shop  
8. Legal and audit  
9. Data processing  
10. Freight, vehicles  
11. Other  
12. Total selling  

<table>
<thead>
<tr>
<th>Operating costs per subscriber ($)</th>
<th>(1,106)</th>
<th>(2,245)</th>
<th>(1,031)</th>
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<tbody>
<tr>
<td>(included in item 1)</td>
<td>(2,384)</td>
<td>(925)</td>
<td>(420)</td>
</tr>
<tr>
<td>(included in item 2)</td>
<td>(1,776)</td>
<td>(976)</td>
<td>(420)</td>
</tr>
<tr>
<td>(included in item 3)</td>
<td>(1,539)</td>
<td>(750)</td>
<td>(320)</td>
</tr>
<tr>
<td>(included in item 4)</td>
<td>(1,120)</td>
<td>(550)</td>
<td>(220)</td>
</tr>
<tr>
<td>(in total selling)</td>
<td>(2,245)</td>
<td>(1,031)</td>
<td>(925)</td>
</tr>
</tbody>
</table>

**Administration:**  
1. Salaries, benefits  
2. Travel  
3. Insurance  
4. Telephone, telegraph  
5. Office, shop  
6. Legal and audit  
7. Data processing  
8. Freight, vehicles  
9. Other  
10. Total administration  

<table>
<thead>
<tr>
<th>Operating costs per subscriber ($)</th>
<th>(7,537)</th>
<th>(917)</th>
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<tbody>
<tr>
<td>(included in item 1)</td>
<td>(5,597)</td>
<td>(777)</td>
</tr>
<tr>
<td>(included in item 2)</td>
<td>(6,776)</td>
<td>(976)</td>
</tr>
<tr>
<td>(included in item 3)</td>
<td>(5,339)</td>
<td>(750)</td>
</tr>
<tr>
<td>(included in item 4)</td>
<td>(4,280)</td>
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<tr>
<td>(in total administration)</td>
<td>(12,241)</td>
<td>(9,099)</td>
</tr>
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</table>

**Technical costs:**  
1. Salaries, benefits  
2. Travel  
3. Insurance  
4. Telephone, telegraph  
5. Office, shop  
6. Legal and audit  
7. Data processing  
8. Freight, vehicles  
9. Other  
10. Total technical  

<table>
<thead>
<tr>
<th>Operating costs per subscriber ($)</th>
<th>(7,989)</th>
<th>(917)</th>
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<td>(included in item 2)</td>
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<td>(included in item 3)</td>
<td>(5,908)</td>
<td>(750)</td>
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<td>(included in item 4)</td>
<td>(4,348)</td>
<td>(550)</td>
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<tr>
<td>(in total technical)</td>
<td>(11,895)</td>
<td>(10,399)</td>
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Other:  
1. Bad debt  
2. Total  

<table>
<thead>
<tr>
<th>Operating costs per subscriber ($)</th>
<th>(2,025)</th>
<th>(295)</th>
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<tr>
<td>(in total)</td>
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<td>(18,996)</td>
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<tr>
<td>(in total)</td>
<td>(54,906)</td>
<td>(42,434)</td>
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Depreciation:  
1. 10% depreciation rate  
2. 20% rate for drops  
3. Total depreciation  
4. Total costs per sub  

<table>
<thead>
<tr>
<th>Depreciation</th>
<th>(19,480)</th>
<th>(2,400)</th>
<th>(2,420)</th>
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<tr>
<td>(in total)</td>
<td>(8,906)</td>
<td>(8,008)</td>
<td>(10,200)</td>
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<tr>
<td>(in total)</td>
<td>(28,380)</td>
<td>(12,299)</td>
<td>(9,902)</td>
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<tr>
<td>(in total)</td>
<td>(35,462)</td>
<td>(31,295)</td>
<td>(23,261)</td>
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**Source:** Confidential.

### Additional Cost Data

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<td>(Continued)</td>
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<td>(No. subscribers)</td>
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<td>[67]</td>
<td>[81]</td>
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Operating costs per subscriber ($):  

**Selling costs:**  
1. Sales commissions  
2. Advertising  
3. Travel  
4. Insurance  
5. Salaries, benefits  
6. Telephone, telegraph  
7. Office, shop  
8. Legal and audit  
9. Data processing  
10. Freight, vehicles  
11. Other  
12. Total selling  

<table>
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<th>(1,045)</th>
<th>(4,245)</th>
<th>(1,031)</th>
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<tr>
<td>(included in item 1)</td>
<td>(2,384)</td>
<td>(925)</td>
<td>(420)</td>
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<td>(320)</td>
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<td>(included in item 4)</td>
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<td>(220)</td>
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<tr>
<td>(in total selling)</td>
<td>(2,245)</td>
<td>(1,031)</td>
<td>(925)</td>
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**Administration:**  
1. Salaries, benefits  
2. Travel  
3. Insurance  
4. Telephone, telegraph  
5. Office, shop  
6. Legal and audit  
7. Data processing  
8. Freight, vehicles  
9. Other  
10. Total administration  

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<td>(in total administration)</td>
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**Technical costs:**  
1. Salaries, benefits  
2. Travel  
3. Insurance  
4. Telephone, telegraph  
5. Office, shop  
6. Legal and audit  
7. Data processing  
8. Freight, vehicles  
9. Other  
10. Total technical  

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Depreciation:  
1. 10% depreciation rate  
2. 20% rate for drops  
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<td>(12,299)</td>
<td>(9,902)</td>
</tr>
<tr>
<td>(in total)</td>
<td>(35,462)</td>
<td>(31,295)</td>
<td>(23,261)</td>
</tr>
</tbody>
</table>
The exceptionally high profitability of mature cable systems is known to most observers of the industry, and it can be hypothesized that cable operators are making the most of their publicly sanctioned monopoly positions today in anticipation of more stringent rate controls in the future.1

The CRTC issued a public announcement in the fall of 1974 listing criteria for consideration regarding cable television applications for increased rates. The announcement states in part:

(a) the quality of service presently provided by the licensee, with particular reference to compliance by the applicant with Commission policy requirements;
(b) proposed additions to or improvements in service, including, without limitation: (i) the introduction of additional channels in accordance with CRTC policy requirements; (ii) the introduction or improvement of community programming; (iii) the introduction of new forms of local origination services; (iv) the improvement of the technical quality of the service provided beyond minimum requirements; (v) the introduction of converter service; and (vi) the role of the licensee in the development and strengthening of the broadcasting system in its area;
(c) the variance of the fees proposed from those generally in effect in the region;
(d) the desirability of reasonable cost sharing to finance the expansion of cable television service within the region in which the licensee’s system is located;
(e) economic need taking into account such factors as: (i) the efficiency of the management of the system; (ii) the financial projections filed with the initial or renewal application; (iii) the factors which have led to the variance from such projections; and (iv) any other factors which have led to the alleged economic need; and
(f) other criteria having particular reference or concern to the licensee and to the area and the subscribers served by it.


While the above is termed "a set of criteria to be taken into account in judging...applications [for a rate increase]" the announcement raises more questions than it answers. For example, if the "quality of service" (however defined) is "unsatisfactory," will rates be permitted to rise in order that service can be improved or will the rate application be denied to penalize the provider of unsatisfactory service? What is the relation envisaged between increased revenues from a rate increase and the costs of providing new services? For example, assuming the cable operator at present is making a supernormal return on his investment, will the rate increase be such that he is also allowed to make a supernormal return to the incremental services provided? Is there to be any public surveillance as to the necessity or desirability of increased services, or so, by what criteria are they judged? What does "other criteria having particular reference or concern to the licensee" and to the area and the subscribers served by it" mean?

It may be concluded that the CRTC does not systematically regulate the rates of the cable television industry. While the CRTC appears to possess powers for such regulation (rates charged are a condition of licence, and CRTC approval is required before rate adjustments can be implemented), the commission has seen fit (by and large) to approve the North American industry standard rates of $5.00 to $8.00 per month. The only specific policy thus far announced by the CRTC with regard to rate increases is contained in the following policy statement: [The CRTC] will not enter into applications for changes in the conditions of CATV licensees as regards customer charges solely to adjust to a capital valuation or terms of payment arrived at in the bargaining between the seller and the buyer." CRTC, Public Announcement, 10 July 1969 (Emphasis added.)

As will be apparent from surveying the data presented in this chapter and in Appendix B, cable firms have been allowed to earn supernormal profits from their monopoly positions in spite of the fact that the CRTC approves rates. At the same time, however, it should be noted that there is some evidence that suggests that cable systems have not been permitted to explain their monopoly position to the fullest extent possible, in spite of the observation that they are earning supernormal returns. Through estimates of the demand equations for cable television service Good was able to conclude that prices charged by cable systems were below the profit and revenue maximizing levels. Demand was found to be price inelastic. Good, "An Econometric Model," p. 109. CRTC rate policy is explored in much greater detail in Appendix B.

The key variables in projecting earnings for a cable system are the number and anticipated growth rate of subscribers, both depending upon the number of households passed by the cable. Growth in households can be predicted from municipal estimates of new housing starts; market penetration will depend, in the first instance, on the superior channel choice and clarity of cable relative to off-air reception and, in the second instance, on a host of variables which have not been fully explored (such as income, rates, the amount of "night-life" in the community, aggressiveness of the cable operators, and the like).2

Since the industry is capital intensive, the number of subscribers to the system is only a relatively minor factor in determining capital investment and annual expenses. It is for that reason that cable systems in

---

1. The CRTC issued a public announcement in the fall of 1974 listing criteria for consideration regarding cable television applications for increased rates. The announcement states in part:

(a) the quality of service presently provided by the licensee, with particular reference to compliance by the applicant with Commission policy requirements;
(b) proposed additions to or improvements in service, including, without limitation: (i) the introduction of additional channels in accordance with CRTC policy requirements; (ii) the introduction or improvement of community programming; (iii) the introduction of new forms of local origination services; (iv) the improvement of the technical quality of the service provided beyond minimum requirements; (v) the introduction of converter service; and (vi) the role of the licensee in the development and strengthening of the broadcasting system in its area;
(c) the variance of the fees proposed from those generally in effect in the region;
(d) the desirability of reasonable cost sharing to finance the expansion of cable television service within the region in which the licensee’s system is located;
(e) economic need taking into account such factors as: (i) the efficiency of the management of the system; (ii) the financial projections filed with the initial or renewal application; (iii) the factors which have led to the variance from such projections; and (iv) any other factors which have led to the alleged economic need; and
(f) other criteria having particular reference or concern to the licensee and to the area and the subscribers served by it.

2. See, however, W. Comanor and B. Mitchell, "Cable Television and the Impact of Regulation," Bell Journal of Economics and Management Science, Spring 1971, for an attempt to estimate the demand for cable television in the United States. Two attempts have been made to estimate the demand for cable television in Canada, but results have not been totally satisfactory. See International Institute of Quantitative Economics, "Economic Study of the Financial and Market Characteristics of the 16 Largest CATV Companies in Canada" (Study prepared for the Department of Communications, 1974); and Good, "An Econometric Model."
early years tend to incur large losses and then, after the subscriber penetration rate has increased, to enjoy supranormal profits.

The term supranormal profits is defined in the literature of economics as describing a level of profits that includes an unearned surplus. Total profits equal the cost of attracting capital to the industry (that is, the opportunity cost of capital) plus economic rent (that is, the reward received by investors over and above the amount required to induce their investment). It is the existence of this latter element of profits that the term "supranormal" describes and its existence reflects monopoly power.

In May of 1974, the Province of Manitoba published a discussion paper on communications which contained historic and projected costs and revenues for the two Winnipeg cable television systems. It was a major contention of the discussion paper that the cable systems in Winnipeg would be earning substantial profits over and above the competitive rate of return as a result of their publicly sanctioned monopoly position. The essentials of the Manitoba findings are reproduced in Table IV-1.

It will be noted from the table that for the year 1978 the rate of return on net investment before tax is estimated to be 89.1 percent. On the assumption that the Winnipeg systems face an infinite time horizon, and assuming that gross profits before interest payments in years subsequent to 1978 are constant at $5 million per year, and that new investment in years subsequent to 1978 is constant at $500,000 per year, the internal rate of return (as viewed from 1969) is 25.1 percent before tax.5

If one assumes that the Winnipeg cable systems have matured by 1976 (the year the Manitoba study projects all debt will have been repaid), one may calculate the internal rate of return with 1976 as the base year, on the basis of the net assets in the system at that year and projected revenues and investments for years subsequent to 1976. Under such assumptions, the internal rate of return of mature cable systems in Winnipeg is 45.1 percent before tax.6

The internal rate of return of 45.1 percent may be interpreted as the profit rate a buyer of a mature cable system would earn if he compensated the present owners only for the net value of tangible assets (that is, investments). The Economics of Nationalized Industries (London: Nelson, 1973), pp. 14-49.)

The above reflects the application of the formula

$$O = \frac{S}{1 + r}$$

where $r$ is the internal rate of return. (See Michael G. Webb, The Economics of Nationalized Industries (London: Nelson, 1973), pp. 14-49.)

The above reflects the application of the formula

$$O = \frac{S}{1 + r}$$

where $O$ is investment in year $O$, $N_t$ is operating profits in year $t$, and $r$ is the internal rate of return. A more accurate representation of the internal rate of return would be given by

$$O = \sum_{t=0}^{\infty} \frac{N_t}{(1+r)^t}$$

where $S$ is the continuous cash flow, $r$ the rate of return, and $t$ the internal rate of return. In this formulation, continuous flows of revenues and expenses are assumed, whereas the formula used above assumes that expenses and revenues occur once each year. (See ibid., pp. 19-20.)

6. Net Present Value

$$O = -10,838 + (5940 - 2072)$$

$$+ 876 + (4850 - 1808)$$

$$+ 529 + (5940 - 2072)$$

$$+ 483 + (6820 - 2113)$$

$$\sum_{t=0}^{\infty} \frac{N_t}{(1+r)^t}$$

where $r$ is the internal rate of return.
Cost Analysis of Cable Television

<table>
<thead>
<tr>
<th>Year</th>
<th>New Investment in cable systems (in millions)</th>
<th>New Investment in cable networks (in millions)</th>
<th>Operating expenses (in millions)</th>
<th>Operating expenses (as a percentage of revenues)</th>
<th>Operating margin (in millions)</th>
<th>Operating margin (as a percentage of revenues)</th>
<th>Debt service (in millions)</th>
<th>Net income (in millions)</th>
<th>Net income (as a percentage of revenues)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>2,780</td>
<td>1,250</td>
<td>500</td>
<td>20%</td>
<td>800</td>
<td>12%</td>
<td>100</td>
<td>300</td>
<td>10%</td>
</tr>
<tr>
<td>1981</td>
<td>2,800</td>
<td>1,300</td>
<td>600</td>
<td>25%</td>
<td>500</td>
<td>5%</td>
<td>150</td>
<td>350</td>
<td>9%</td>
</tr>
<tr>
<td>1982</td>
<td>2,800</td>
<td>1,350</td>
<td>700</td>
<td>20%</td>
<td>450</td>
<td>6%</td>
<td>120</td>
<td>300</td>
<td>6%</td>
</tr>
</tbody>
</table>

Note: Data for the years 1979, 1978, and 1977 are not available.

scribers in Winnipeg value their local origination channel to the extent that 
sonably could be asserted that, by requiring the cable operator himself 
require the cable operator himself to programme, there would be two dis­ 
and looks on programming as an obligation forced upon it by the com­ 
reserved to the government of Quebec: "Cable television companies 
7. Allowing 15 percent as a reasonable rate of return on net investment before tax, surplus 
8. For example, the following statements were submitted by the Canadian Cable Televis­ 
roots to earn, management, transmission rather than programming. Cable television is first 
written for the year 1973 to 1978. In fact, it reasonably could be asserted that, by requiring the cable operator himself to originate programming, the local channels never will develop satisfac-
tory, since the cable industry itself is by and large "hardware" oriented and looks on programming as an obligation forced upon it by the commission, and its efforts to date reflect this attitude. Were the CRTC (or a provincial body) to license and subsidize (with the excess cable profits) community groups that are interested in programming, rather than to require the cable operator himself to programme, there would be two distinct advantages: (a) rate of return regulation could be applied to the hardware operations to limit the monopoly pricing currently practised, and (b) more rapid development of community programming would occur as the groups responsible for programme development would have an interest and incentive in improving their output.

Data on the profitability of the Canadian cable television industry are published annually by Statistics Canada. In presenting these data a cautionary note should be made: older systems and newer ones are averaged together, thereby understating the long-term profitability of the cable industry. Table IV-2 presents Statistics Canada industry data for 1967 to 1974. It must be concluded that a pretax rate of return of 19 percent in 1974 for the industry as a whole indicates that the industry is quite profitable. The trend of the rate of return since 1967 is in an upward direction.

More meaningful analysis, however, can be carried out by disaggregating the data by revenue group, and this exercise is carried out in Table V-4 infra in connection with a discussion of the structure of the Canadian telecommunications industry. In the discussion associated with Table V-4, it will be noted that the large systems are more profitable than the industry as a whole, and that profitability is increasing through time.

PUBLIC POLICY IMPLICATIONS

From the data and analysis presented, certain policy conclusions may be reached in three areas: the desirability of maintaining fragmented.

<table>
<thead>
<tr>
<th>Profitability and Public Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table IV-2: Canadian Cable Television Industry, 1967-1974</td>
</tr>
<tr>
<td>(in millions of dollars)</td>
</tr>
<tr>
<td>Revenues</td>
</tr>
<tr>
<td>Operating expenses</td>
</tr>
<tr>
<td>Operating profit</td>
</tr>
<tr>
<td>Depreciation</td>
</tr>
<tr>
<td>Net profits before tax and interest payments</td>
</tr>
<tr>
<td>Net fixed assets</td>
</tr>
<tr>
<td>Rate of return (net assets (%))</td>
</tr>
</tbody>
</table>

* Estimates.
ownership in large municipalities; the feasibility of promoting competition through over-wiring; and an assessment of the likelihood that CATV will serve underpopulated rural areas if public policy were directed to replacing over-the-air broadcasting by cable.

Fragmented Ownership

Strong theoretical and empirical evidence has been presented to indicate that small CATV systems tend to be more efficient than large systems, although a minimum system length of 150 to 200 miles appears to be necessary. In situations where several CATV operators in a municipality could pool their resources into the joint ownership of the highest quality head-end, and share any microwave and programming costs, any lingering disadvantages of such a policy of dividing up territories would tend to disappear.

There may be advantages to a policy of fragmented ownership in addition to the cost advantages of small systems. For example, the presence of more than one CATV system within a municipality will give the residents of that community a yardstick with which to compare performance. The greater the number of systems, the higher the level of service that should be achieved by some system, and, hence, the greater will be the pressures on other systems to match the standards achieved by the best system in the area.

Another factor, and to some a very real advantage, involves the fragmentation of economic power as a political question. There do not appear to be any technological imperatives leading to concentrated ownership in the CATV industry, and so, from this viewpoint, cable television need not follow the example set by the telephone companies through the years with regard to the concentration of control in the industry. If one accepts the proposition that great concentrations of private power, which, by definition, are more or less independent of most forms of social control (including market forces as well as political forces), may imperil both the effective functioning of democratic institutions and the efficient operation of the market economy, then with the spectre of concentration of control in the industry, must be built to handle the traffic. In such a case, government initially may imperil both the effective functioning of democratic institutions and the efficient operation of the market economy, then with the spectre of concentration of control in the industry,

Over-wiring

Over-wiring, that is, allowing direct competition between two or more systems in an area, appears not to be feasible in the cable television industry. Given the current practice whereby CATV systems simply transmit broadcast television via cable, the consumer would have no incentive to join more than one CATV system. Assume, for example, that a single area has two CATV systems of equal "quality," with each system having, say, 40 percent of the houses passed by the cable as subscribers (80 percent overall penetration). It seems unlikely that such a situation would remain stable for a very long time. As has been seen, the costs per subscriber faced by each firm will be about $45 (assuming 5,000 subscribers to each firm, total yearly costs would amount to $450,000), whereas, if a single firm were able to attract all the current CATV subscribers, costs would fall to about $30 per subscriber ($300,000 total per year). In other words, substantial gains could be made by the firm with the largest resources by shaming prices in an effort to expand its penetration. Such price cutting would inevitably lead to the elimination of one of the firms.

The possibility of two competing firms operating together in an area becomes more remote when it is remembered that in the most desirable cities a single monopoly firm now exists in each licensed area. The likelihood of any independent competitor trying to enter such a market is very low. He would face the task of winning away current subscribers from the other system without provoking retaliation. The cheapest method of entry would appear to be outright purchase of the "competing" system.

There may be a time, however, when over-wiring in some areas may prove to be an attractive policy. This time will be, of course, when the capacity of the single coaxial cable has been exhausted and a new cable must be built to handle the traffic. In such a case, government initially could efficiently divide the services carried on the two cables in such a way as to ensure the ability of both to survive. However, so long as a single cable has the capacity to handle a fairly large proportion of the services desired of it, over-wiring will remain impractical.

Extension of Service

The question of the likelihood that cable will expand to rural areas is important when deciding whether over-the-air broadcasters should be protected or allowed to "wither away" under the pressures of a new policy of over-wiring, that is, allowing direct competition between two or more systems in an area, appears not to be feasible in the cable television industry. Given the current practice whereby CATV systems simply transmit broadcast television via cable, the consumer would have no incentive to join more than one CATV system. Assume, for example, that a single area has two CATV systems of equal "quality," with each system having, say, 40 percent of the houses passed by the cable as subscribers (80 percent overall penetration). It seems unlikely that such a situation would remain stable for a very long time. As has been seen, the costs per subscriber faced by each firm will be about $45 (assuming 5,000 subscribers to each firm, total yearly costs would amount to $450,000), whereas, if a single firm were able to attract all the current CATV subscribers, costs would fall to about $30 per subscriber ($300,000 total per year). In other words, substantial gains could be made by the firm with the largest resources by shaming prices in an effort to expand its penetration. Such price cutting would inevitably lead to the elimination of one of the firms.

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Extension of Service

The question of the likelihood that cable will expand to rural areas is important when deciding whether over-the-air broadcasters should be protected or allowed to "wither away" under the pressures of a new pro...
gramme distribution system. The advantages of cable as a distribution system are numerous: it economizes on spectrum usage; it allows "narrow-casting" or programming for specific, identifiable groups, rather than broadcasting or programming for the masses; and it allows for a multiplicity of programme sources, since the number of channels available in an area at one time is, in principle, limitless.

These advantages of cable over transmitter remain academic, however, so long as government policy to ensure the availability of privately owned television to all Canadians remains in force, if the likelihood of cable advancing to rural areas remains remote. The CRTC has attempted to minimize the negative impact cable television could have on traditional broadcasting stations. The commission believes that cable television will not become available to as large a percentage of the population as broadcasting for many years. So long as the commission believes that the availability of CATV will be more restricted than broadcasting, cable will not be allowed to replace broadcasting. Therefore, some assessment of the likelihood that cable will be extended to rural areas becomes important.

In Figure III-5 fixed investment per potential subscriber (households passed by cable) was plotted against the number of households per mile. It was found that for densities greater than 150 households per mile, such fixed investment tended to be low ($25 or so), but if the population density was around 100 households per mile, such investment was high ($50) and grew rapidly as density further declined. At a density of 55 households per mile, average investment per potential subscriber was found to be over $90 (excluding drops), and the curve was rising rapidly. Operating costs for the firm in the area of low population density also were relatively very high ($45 per potential subscriber).

Unfortunately, estimation of the minimum density of households per mile that would be necessary to support a cable television system without cross-subsidization from more lucrative areas also requires an estimate of the amount that residents would be willing to pay for the service. If one may take $65 per year (which is roughly what urban households pay) as the amount that would maximize revenues, and take $2,000 as the average expenses incurred per mile by small cable systems, the break-even point for the cable firm will be 31 households per mile of cable assuming a 100 percent subscription rate. If only 80 percent of the houses may be expected to hook into the system, the minimum density just to recover costs rises to 39 households per mile.

On the other hand, of course, should the CRTC decide that the profits earned in urban areas were excessive, it could undertake public util-
Appendix B
A Case Study of Premier Cablevision, Limited

CRTC CABLE TELEVISION RATE POLICY

"Broadcasting undertakings in Canada make use of radio frequencies that are public property and such undertakings constitute a single system, herein referred to as the Canadian broadcasting system, comprising public and private elements; the Canadian broadcasting system should be effectively owned and controlled by Canadians so as to safeguard, enrich and strengthen the cultural, political, social and economic fabric of Canada." Cable television, defined in the Broadcasting Act as "broadcasting receiving undertakings" forms a component of the "single system" and as such falls under the jurisdiction of the Canadian Radio-Television Commission. The CRTC is given the responsibility of regulating and supervising all components of the system so as "to safeguard, enrich and strengthen the cultural, political, social and economic fabric of Canada." Through its licensing powers over CATV, the commission has attempted to "integrate" cable television into the broadcasting system in such a way as to minimize the economic impact of CATV on the over-the-air component of the system.2

In chapter IV the extraordinary profitability of CATV operations was noted. It also was noted that approval of rates charged by CATV undertakings is required when cable licences are granted, and such rates are included in the conditions of licence; any change in rates charged must be approved by the commission. Through the years the CRTC has evolved a set of criteria for evaluating applications for increases in rates,3 but it has not systematically undertaken to regulate the profits of the industry. Possible reasons for this reluctance to invoke profit regulation are treated more fully below. At this point, however, it is worth noting that the absence of systematic rate regulation in the industry may be due to the fact that the Broadcasting Act does not specifically decree that the CRTC is to regulate the broadcasting system in such a way as to protect the interests of the consumer (the cable subscriber); rather, the commission is to supervise the system in such a way that the system will "strengthen the cultural, political, social and economic fabric" of the country. In the case of an economic conflict between the public and a broadcasting undertaking, therefore, the commission tends to side with the broadcasting undertaking.

As stated, the commission has established guidelines ("criteria") within which applications for rate adjustments are evaluated. Within the context of published guidelines it is the responsibility of the cable company to justify the rates requested. It appears that an application for an upward adjustment in rates will be received favourably by the commission if the cable operator can establish that the rate increase is necessary to enable the company to provide the minimum service requirements set out for the system.4 Similarly, rate increases generally will be approved by the commission if the application also includes proposals to increase the levels of service over and above the minimum required or above that level currently provided by the system.5 The cable company itself has responsibility for proposing and justifying the rate levels, and it appears that the commission itself does little monitoring of the economic performance of the systems under its control. By and large it accepts the cost-revenue projections provided to it by the applicant.6

NOTE: This appendix was co-authored by Peter Anderson and Robert Babe. Mr. Anderson is research assistant, Telecommunications Research Group, Simon Fraser University, Burnaby, British Columbia.

2. CRTC policies in this regard are discussed in detail in chapter XIV.
3. See footnote 1 of chapter IV for CRTC criteria regarding rate adjustment applications.

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Premier Cablevision, Ltd. 61
The CRTC does not itself initiate hearings to adjust the rates of particular systems, and, consequently, there has never been a case of a downward rate revision by commission order. In brief, if a cable operator sues the commission that higher rates are required to implement new services (the new services themselves generally resulting from the initiative of the cable operator rather than the commission), the CRTC will approve the rate increase. Once approved, if the rates are in effect up to the date in light of the subsequent economic performance of the system unless such a review is requested by the cable company itself in contemplation of a further rate increase. If rates are "too low," in other words, they will be revisited upward; if they are "too high," they will remain unadjusted. The results of this lack of systematic profit regulation have been observed above, namely, supranormal profits for mature systems. Much insight regarding CRTC rate-making policy can be gleaned by quoting from the Canadian Cable Television Association's newsletter (CCTA News, vol. 8-74, October 1974, p. 2): "CCTA has advised the CRTC that the CRTC may face a hundred or more rate applications per year [for rate increases], the rules and high interest rates. The CRTC has confirmed that it is prepared to handle such a volume of work load, and that it intends to treat the great majority of applications as non-appearance items on the agenda of the Public Hearings." The record of the CRTC decisions on rate increases, over the past two years, is seventy-eight approved and four denied." (Emphasis added.) There are several hypotheses that can be brought forth to explain this asymmetric form of rate regulation. First, the CRTC views as its mandate the integration of cable television into the broadcasting system in such a way as to prevent CATV from disrupting the financial well being of the over-the-air component of the system. Therefore, the CRTC may believe that by regulating the rates of cable undertakings and consequently forcing a downward revision of the rates of many cable systems, it would be fostering increased cable penetration, thereby making its task of protecting the over-the-air component more difficult. High rate policies and "parsi pasuci" supranormal profits to the cable industry, therefore, the CRTC may be attempting to retard cable penetration in order to protect broadcasters. An additional CRTC has insufficient staff to monitor the economic performance of the 350 odd cable systems in Canada.

7. CRTC Chairman, Pierre Juneau, has been quoted as follows: "Every time we talk about developing cable as if it were a public utility, like telephone or hydro or water, what you are saying in fact is 'Let's make sure you get these four American networks into Canada as fast as we can.' ... Our mandate is not to wire up Canada as fast as possible for American television." Manitoba, Minister of Consumer, Corporations and Internal Commerce, Broadcasting and Cable Television: A Manitoba Perspective, p. 34.

At the same time, however, the CRTC has approved cost-sharing arrangements among cable systems. As regards distribution facilities, the Commission states that it cannot foresee as a realistic possibility cable television being provided to every home across the country. It should also be clearly stated that the Commission has received no mandate from the Parliament of Canada to extend the reach of U.S. signals throughout Canada. To the extent that cable television has the effect of accelerating this reach into Canada, the Commission believes that such use of cable television should not be encouraged." Ibid.

8. See chapter VI, infra.

9. See chapter XV, infra.

10. The CCTA states: "Cable television comes under the authority of the Broadcasting Act and of the CRTC. CCTA members support this Act and believe the orderly expansion of cable television can best be achieved by regulation and supervision at the Federal level, but with Provincial input. ... The Canadian cable industry is already highly factor that retards the growth of cable penetration is that the CRTC does not require profitable cable systems to extend service to unprofitable areas through the principles of cross-subsidization and cost averaging. Since a resort to such a standard directs an industry as much through its implicit policies, reflected by the absence of precise regulations, as it does through specific requirements, and since the commission does not impose profit limitation or require extension of service, one must conclude that the CRTC is striving to keep cable penetration low. (For further reference to implicit versus explicit regulation, see footnote 17 of chapter VIII.) By way of added explanation to this first point, since cable television is defined as a component of the broadcasting system, the CRTC may believe that it should treat all components of the system in a consistent manner. As profit regulation (that is, regulation of advertising rates) has not been implemented with regard to over-the-air broadcasting, the commission may feel that it either should be invoked over the cable component of the system. Cable television is "encouraged" to engage in local programming, and, on the principal that common carriers should not control the messages delivered over their system, telephone companies have not been allowed to hold CATV licences. It may be seen as consistent, therefore, not to regulate the rates of a cable system that is expected to engage in programming.

Second, the CRTC's reluctance to regulate the rates of the cable industry may be explained by the jurisdictional squabbles over CATV with the provinces. This hypothesis has two dimensions. In the first place, by treating cable television systems as broadcasting undertakings that are expected to engage in programme origination, federal jurisdiction over cable is on firmer ground than it would be were CATV viewed as a public utility. If CATV were viewed primarily as a "hardware" telecommunications distribution system subject to rate regulation, rather than as a "software" programme origination system subject to the cultural goals set for broadcasting, provincial primacy in the field would probably receive the backing of the courts. In the second place, it could be argued that, as an agency of the federal government, the CRTC is trying to enlist the support of the Canadian Cable Television Association in the battle for jurisdiction with the provinces. Presumably the cable industry will support the level of government it feels will do the least as regards regulation. At least two provinces (Manitoba and Saskatchewan) have proposed limiting the profits accruing to the industry within their territories.
Third, historically a basic principle of broadcast regulation in Canada has been that "the only thing that really matters in broadcasting is program content; all the rest is housekeeping." In practice, the belief that program-making somehow takes on a life of its own has meant that broadcasting has been naively in the context of economic structure and performance. There has been little perception of the basic economic concept that in order to induce the performance desired of the broadcasting industry it is necessary to structure the incentives faced by the broadcasters in such a way as to make the desired conduct in accord with their enlightened self-interest. Rather, it has been held by policymakers that by protecting the industry, thereby generating revenues to the industry, the desired type of performance inevitably would follow. In fact, the policy of protecting private enterprise in order that it would have the potential to further social goals dates back to Sir John A. Macdonald; to many observers, however, the result of such policies has been continually disappointing. It is also well, however, that the CRTC believes that by avoiding profit regulation in the cable industry (and, consequently, redistributing income from the consumers to the enfranchised cable company), it is strengthening the broadcasting system by enabling companies to engage in good local programming on cable systems, by enabling cable television to extend service to unprofitable areas, and by allowing cable systems to amass resources so that technological advances could result.

If valid, the three explanations of the lack of systematic profit regulation can be compared. As will be shown in Part IV, cable television in the past has not had a perceptible impact on the health of the over-the-air system. In addition, by replacing random signal emission with the enclosed signal distribution provided by cable, regulatory authorities are granted new degrees of freedom in planning the development of the broadcasting industry. Therefore retarding cable penetration through high rates to consumers does not appear to be either necessary or desirable.

Consulted with over-the-air broadcast regulation does not appear to form a logical explanation either. In return for a degree of protection, broadcasters are required to meet a Canadian content quota and to extend service to unprofitable areas, both requirements being self-enforcing. To see whether the CRTC believes that it does not provide justification. In fact, it could be reasonably argued that jurisdiction should fall to the level of government willing to do the most in this regard rather than that level prepared to do the least.

Finally, the proposition that, by protecting the profits of the industry, the CRTC is able to encourage nonprofitable activities will be treated by a case study below. As stated, this proposition is not held in high regard by many students of industrial performance.

In what follows, the corporate history of Premier Cablevision, Ltd. is described in order to determine whether some insight may be gained as to the ramifications of the absence of profit regulation in the CATV industry. For example, should it be determined that high profits have allowed the firm to rechannel funds back in sup

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14. Local origination expenses currently account for about 3 percent of industry revenues. (Statistics Canada, Cable Television 1972. See also footnote 5 above.) In recent decisions granting applications for new CATV undertakings, however, the commission has imposed in the conditions of license promises made by the successful applicant to set aside a fixed proportion of subscriber revenues for local programming. For example, in granting the hearing, the applicant stated that it proposes a minimum of 50 cents per subscriber per month to be allocated to a fund for local programming. The Commission accepts the proposed installation fee of $25.00 and monthly charge of $8.00 which includes microwave charges." CRTC, Public Announcement, 13 May 1974, Decision 74-136.

15. However, as noted in footnote 7 of this appendix, the CRTC does not appear to be actively encouraging extension of cable service to unprofitable areas. Cable operators themselves, of course, are not interested in this either, given current regulatory patterns.

16. See, however, footnote 5 of this appendix.

17. See footnote 13 of this appendix.
If federal cable policy voiced above are unimportant. On the other hand, if it is determined that high levels of retained earnings have been used primarily for corporate expansion into other fields of endeavour and into other countries, it could be concluded that federal policy is simply causing a redistribution of income from consumers to monopoly firms without much improvement in the broadcasting system. It should be emphasized, of course, that the following paragraphs detail the corporate history of only one cable firm, albeit the largest, and for definite conclusions to be reached, other large systems should be studied in similar detail.

PREMIER CABLEVISION, LIMITED: BACKGROUND

Premier Cablevision, Ltd. is a holding company with five large Canadian CATV subsidiaries (Canadian Wirevision, Ltd., the world's largest cable system with over 150,000 subscribers; York Cablevision, Ltd.; Victoria Cablevision, Ltd.; Oakville Cablevision, Ltd.; and Coquitlam Cablevision, Ltd.). In addition, Premier has offered to purchase control of Keeble Cable Television, Ltd.). It also has interest in or controls cable television equipment manufacturing and distributing companies; a CATV management and engineering consulting firm; cable systems in England, Ireland, and Hawaii with an option for CATV interests in New Zealand; an NHL hockey team; and a pay television company. Although traded as a public company on the Toronto Stock Exchange, actual share control of Premier is held by the Columbia Broadcasting System, Inc. (U.S.) and three Canadian gentlemen, Sydney W. Welsh, "Bud" J. Shepard, and W. Garth Pither (the "Welsh Group") either directly, or indirectly through several other holding companies.

The company that is now Premier was at one time owned to the extent of 75 percent by a foreign company (CBS). By Canadian ownership regulations regarding broadcasting undertakings CBS was required to divest itself of control in Premier (although it still retains approximately 20 percent interest in the company, the largest single block of shares). While the company that is now Premier began in the early 1950s as a cable system serving a single Vancouver apartment building, it has grown into a multinational conglomerate controlling the world's largest single CATV undertaking. By studying the corporate history of Premier, it is hoped some insight may be gained as to: (1) the costs and benefits of the absence of systematic profit regulation in the CATV industry; and (2) the complexities of regulating a multinational, vertically integrated conglomerate whose largest single shareholder is itself a multinational conglomerate.

CORPORATE HISTORY

Early Years

In 1953 Messrs. Sydney W. Welsh, John Shepard, and Garth Pither entered the cable television business with the installation of a system to serve one apartment building in Vancouver. As CATV equipment suppliers (Fred Welsh Antenna Systems), these three men also engineered or equipped cable systems in eleven British Columbia communities during the mid-1950s. During the late 1950s and early 1960s half a dozen separate cable systems were built in Vancouver, and in 1962 these systems were consolidated into a single large system, perhaps the first large city cable system (today known as Canadian Wirevision). Canadian Wirevision came to be controlled through a holding company owned by the "Welsh Group"—Vancouver Cablevision, Ltd.

On 29 April 1964 pursuant to the Companies Act of British Columbia, Classic Developments, Ltd. was incorporated by the Columbia Broadcasting System, Inc. (and a few minority shareholders whose interest CBS later acquired) as a holding company. In the same year an agreement was negotiated between CBS (through its subsidiary Classic Developments, Ltd.) and Vancouver Cablevision, Ltd. to form Canadian Wirevision, Ltd. Classic Developments' only holding until 1971 was 25 percent of the issued common shares of Canadian Wirevision, Ltd. Twenty-five percent of the issued common and preferred shares were held by Vancouver Cablevision, Ltd., while CBS itself directly owned 75 percent of the preferred shares.

National Cablevision, Ltd.

In 1965 Mr. Welsh and his group, together with CBS, formed a new company, National Cablevision, Ltd., which acquired systems in Montreal and surrounding communities (from Rediffusion, England) and in the Coquiltam area of British Columbia. Subsequently, through subsidiaries of National, service was extended to Quebec City (Telecable de Quebec, 1966) and Toronto (York Cablevision, 1967). Additional systems were built in North Vancouver and Surrey, B.C.

Cascade Electronics, Ltd.

In 1966 the Welsh Group founded Cascade Electronics, Ltd., a manufacturer of electrical and other specialized equipment used in the cable television industry.

Victoria Cablevision

In 1959 Victoria Cablevision was started by the Curran brothers, and this company was later taken over by Messrs. Welsh, Shepard, and Pither, CBS, and local Victoria shareholders.
Hawaii and Oakville

In 1968 the "Welsh Group" constructed a cable system on Oahu Island, Hawaii (Millian Cablevision, Inc.) and began construction of Oakville Cablevision, Ltd. with local Ontario partners.25 The Hawaiian cable system, according to the Financial Post, is a separate venture by B.J. Shepard, president of Premier,26 but in a report to the shareholders for the nine months ending 31 May 1974, the chairman of the board of Premier (Sydney Welsh) states: "Your directors have also authorized your Company to proceed with certain cablevision ventures in the South Pacific under the direction of B.J. Shepard and it is expected that a start will be made on these systems in the Fall of this year."27

In June 1973 Oakville Cablevision, Ltd., was owned by Evergreen Cablevision, Ltd. (41.8 percent); Biron Enterprises, Ltd. (35.3 percent); Queensboro Investment Co., Ltd. (11.7 percent); and four individuals (including Messrs. Shepard and Welsh). Evergreen Cablevision, Ltd. was owned by Welsh Cable Vision, Ltd. (24 percent); Farwest Cablevision, Ltd. (23 percent); Southlands Cablevision, Ltd. (23 percent); and Quadra Sales Ltd. (12.5 percent). Welsh Cable Vision, Ltd. was owned by S.W. Welsh (99 percent of the common "A" shares). Farwest Cablevision, Ltd. was owned by the Shepard family (100 percent). Southlands Cablevision was owned 100 percent by the Pither family. Queensboro Investment is owned in part by Welsh Cable Vision (25 percent).28 On 20 February 1973 Premier acquired 100 percent interest in Oakville Cablevision.

Ireland

In 1970 the Welsh Group expanded to Dublin, Ireland, through Marlin Communal Aerials, Ltd. Shamrock Cablevision, Ltd., a British Columbia company, owned 20 percent by Welsh Cable Vision, Ltd., held a 25.9 percent interest in Marlin.29 In 1972 Premier itself purchased 28 percent of Marlin for approximately $20,000 and agreed to lend Marlin an approximate $1,120,000. In addition, Premier purchased 49 percent of Wirevision, Ltd. of Dublin, Ireland, and agreed to lend Wirevision about $150,000. Wirevision itself holds 25.9 percent interest in Marlin Communal Aerials.30 Marlin currently has approximately 30,000 subscribers.

Premier is planning on expanding its interest in Ireland: "Your Company, which already controls Marlin Communal Aerials Limited in Dublin, Eire, is negotiating the purchase of assets of two adjacent cablevision companies. On finalization of these acquisitions the 10,000 subscribers of Rentel Limited and 6,000 subscribers of Television Erectors Limited will be served by

25. Ibid.
30. Ibid.

CBS Divestiture

By order in Council PC 1969-2229, all broadcasting undertakings in Canada are required to have at least 80 percent Canadian ownership. Therefore CBS was required to reduce its holdings in the various companies to not more than 20 percent. In order to effect the transfer of shares, Classic Developments (now Premier) agreed to "acquire for cash and through exchanges all issued preferred shares of Wirevision and the balance of its issued common shares, and all the issued common shares of Victoria, Coquitlam and York."

Classic Developments obtained the 75 percent of the preferred shares in Wirevision held by CBS for $1,318,895 and the 25 percent interest in Wirevision held by B.C.S. for $349,632; it purchased Coquitlam Cablevision from CBS and from Evergreen Cablevision, Ltd. in return for shares in Classic; it purchased Victoria Cablevision from CBS, the Curran brothers, and from Fred Welsh Antenna Systems (the latter partnership composed of Welsh Cable Vision, Ltd., Farwest Cablevision, Ltd., and Southlands Cablevision, Ltd.) and other minority shareholders of Victoria in exchange for shares. It purchased York Cablevision, Ltd. from CBS and Evergreen Cablevision, Ltd. for an exchange of shares. CBS and Evergreen Cablevision, Ltd. had founded and organized York and Coquitlam indirectly through National Cablevision, Ltd.31 On 20 August 1971 the name of the holding company was changed from Classic Developments, Ltd. to Premier Cablevision, Ltd. and on 8 October 1971 Premier was converted to a public company.

As of December 1973 all shareholders of Premier either owning directly or indirectly 10 percent or more of the common shares in the company, or having a management interest in the company were:32 Columbia Broadcasting System, Inc., 19.88 percent; Sydney Wallis Welsh, 12.07 percent; B.J. Shepard, 6.18 percent; and W.G. Pither, 5.69 percent.

Dividends of $16,796 were paid on common shares outstanding during 1971, all owned at the time by CBS, Inc. No dividends have been paid since the public offering in 1971.33

Fred Welsh Antenna Systems

An agreement, dated 17 August 1971, between Premier and Fred Welsh Antenna Systems (FWAS) was signed whereby FWAS will provide technical, marketing, advertising consulting, management, and other services and cable television equipment for a term of 5 years at a remuneration equal to: (a) the salaries and fringe benefits of employees, agents, or servants of

32. Ibid., Prospectus, p. 11.
33. Ibid., p. 12.
34. Ibid., Notice of 1973 Annual Meeting.
Fred Welsh Antenna Systems who provide services to the Company and its subsidiaries, plus 12 1/2 percent of the sum payable for technical and operating services and 35 percent of the sum payable for management and consulting services; (b) 12 1/2 percent of the cost of equipment and hardware sold by Fred Welsh Antenna Systems to the Company or its subsidiaries, provided that the Company and the subsidiaries shall be free to purchase equipment from others at more favourable prices if obtainable.36

FWAS supplies, on a worldwide basis, equipment and services relating to the construction, operation, and maintenance of CATV systems. In addition to supplying such services to Premier's own Canadian subsidiaries, FWAS has extended to South America, to certain Western European countries, and to New Zealand and Hawaii (again, mostly subsidiaries of Premier). FWAS also holds 15 percent interest in Oceanic Cablevision, Inc., which holds 100 percent interest of cable systems in Honolulu, Miami, and Waipio, Hawaii. In addition a 15 percent share of Cablevision (New Zealand), Inc., held by Southlands Cablevision, Ltd., apparently is assignable to FWAS.37

In August 1973 the Directors of Premier (excluding Messrs. Welsh and Shepard) passed a resolution whereby Premier would acquire "certain assets and rights of Fred Welsh Antenna Systems used in the conduct of its business in supplying equipment and services relating to the construction, operation, and maintenance of cable television systems."38 The resolution was approved by the shareholders in October 1973.

The purchase price is equal to the book value of the assets and rights to be purchased determined pursuant to the audited financial statements of FWAS as at May 31, 1973 together with the sum of $53,931 in respect of goodwill reduced by the amount of the trade accounts payable and bank indebtedness of FWAS relating to business as at such date. [The purchase price was $1,118,640]39

Had the Acquisition Agreement been in effect during the twelve month period ended August 31, 1973 it is estimated that the elimination of charges to FWAS by the Company and its subsidiaries would have resulted in a saving of expenses to the Company of approximately $150,000. In addition, the Company anticipates that the implementation of the Acquisition Agreement will result in an improvement in the projected consolidated net earnings of the Company for the year ending August 31, 1974 in excess of $100,000.40

36. Note there is no provision in (a) for purchasing consulting services at lower prices elsewhere. Premier Cablevision, Ltd., Notice of 1973 Annual Meeting. The notice also states: "Fred Welsh Antenna Systems is a partnership of three equal corporate partners, two of which are Welsh Cable Vision Ltd., a company controlled by Sydney Welsh Welsh, Jr., and Farwest Cablevision Ltd., a company controlled by Bud John Shepard, and as such the partners and the said two partners have an interest in the supply of technical and operating personnel, management and consulting services and the sale of cable television equipment to each subsidiary of the Company. The approximate aggregate amount paid or payable by the subsidiaries of the Company, directly or indirectly, to Fred Welsh Antenna Systems for such services and equipment during the 1972 fiscal year was $4,600,000."


38. Ibid., Notice of Annual Meeting of Shareholders, 1974. Welsh and Shepard did not and could not vote either as directors or shareholders of Premier because of conflict of interest law, under the B.C. Companies Act.


40. "The approximate aggregate amounts paid by the subsidiaries of Premier over the period 1968-1971 to Fred Welsh Antenna Systems for cable television equipment were $1,561,000 in 1968, $1,595,000 in 1969, and $1,837,000 in 1970 and $824,000 for the six months ended June 30, 1971. The approximate aggregate amounts paid for all technical, operating, management and consulting services during these periods were $466,000 in 1968, $496,000 in 1969, and $857,000 in 1970 and $459,000 for the six months ended June 30, 1971."

41. Ibid., Notice of 1973 Annual Meeting.

42. Ibid., Welsh and Shepard, and together each owned 31 1/2 percent of Spectrum Cablevision, Ltd., 43. Cascade Electronics, Ltd., a supplier to Fred Welsh Antenna Systems of some of the cable television equipment it sells to the subsidiaries, was owned by CBS to the extent of approximately 44 percent and by Evergreen to the extent of approximately 44 percent. Aircraft, and at such time, Mr. Welsh and Mr. Shepard have and CBS has had an indirect interest in the sale of equipment to the Subsidiaries by Fred Welsh Antenna Systems. CBS was also agreed to sell as of August 31, 1971 its remaining interest in Cascade Electronics, Ltd. to Spectrum Cablevision, Ltd., a company owned by Messrs. Welsh and Shepard in their own right.

43. "The approximate aggregate amounts paid by the subsidiaries of Premier over the period 1968-1971 to Fred Welsh Antenna Systems for cable television equipment were $1,561,000 in 1968, $1,595,000 in 1969, and $1,837,000 in 1970 and $824,000 for the six months ended June 30, 1971. The approximate aggregate amounts paid for all technical, operating, management and consulting services during these periods were $466,000 in 1968, $496,000 in 1969, and $857,000 in 1970 and $459,000 for the six months ended June 30, 1971."

44. Ibid., Notice of Extraordinary General Meeting, 7 September 1973.

45. Ibid., Notice of Annual Meeting of Shareholders, 1974. Welsh and Shepard did not and could not vote either as directors or shareholders of Premier because of conflict of interest law under the B.C. Companies Act.

46. Ibid., Information Circular, 7 September 1973.

47. "The approximate aggregate amounts paid by the subsidiaries of Premier over the period 1968-1971 to Fred Welsh Antenna Systems for cable television equipment were $1,561,000 in 1968, $1,595,000 in 1969, and $1,837,000 in 1970 and $824,000 for the six months ended June 30, 1971. The approximate aggregate amounts paid for all technical, operating, management and consulting services during these periods were $466,000 in 1968, $496,000 in 1969, and $857,000 in 1970 and $459,000 for the six months ended June 30, 1971."


49. Ibid., Welsh and Shepard, and together each owned an own 31 1/2 percent of Spectrum Cablevision, Ltd.
Cablevision, Ltd., companies, musical instrument manufacturing, toy manufacturing and distribution, book publishing, motion pictures, magazine publishing, electronic conglomerate. Not only is the largest single shareholder of the company a multinational conglomerate (CBS, which has interest in television and radio broadcasting stations and networks, record manufacturing and distributing equipment through Cascade Electronics and Delta-Benco, equipment purchasing, and management and engineering consulting advice through Fred Welsh Antenna Systems.) These secondary holding companies also had Wirevision (Messrs. Welsh, Shepard, and Pither) came to exercise control, if not directly through share ownership of Canadian Wirevision (or Premier and Optical Systems Corporation). Through various holdings, companies owned by the “Welsh Group” to diversify both at home and abroad has been its ability to earn supranormal profits from its four primary cable television endeavours in the absence of regulatory constraint. The earnings of each of these four cable systems is given in Tables B-1 through B-4 for the years 1966-1972. By taking cable as a reasonable rate of profit a return of 16 percent of net assets before tax, the surplus accruing to the four major cable subsidiaries of Premier was $2.4 million in 1971 and $2.7 million in 1972, before tax. In other words, effective profit regulation in the industry based on a pretax return of 16 percent could have resulted in a consumer saving of 23 percent of actual consumer expenditures on cable services for the four systems. It may had been that 16 percent probably is close to the cost of capital for large city cable systems in view of the fact that such systems are low risk enterprises. According to Laurence Fox, treasurer of Premier Cablevision, Ltd., “Cable television is not a cyclical industry. While we suffer from inflation like everyone else, we are quite recession-proof.”

CONCLUSIONS

In light of the corporate history and data presented, the following statements appear to be in order.

1. The cable television systems in question are highly profitable, but it appears that these profits primarily have been used to diversify the holdings of Premier and to allow the company to expand into other countries. An informed industry source has estimated that only 2 percent of Canadian Wire

### Table B-1. Canadian Wirevision, 1966-1972

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<td>Revenues</td>
<td>$2,059,000</td>
<td>$2,685,000</td>
<td>$3,388,000</td>
<td>$4,255,000</td>
<td>$5,046,000</td>
<td>$5,836,000</td>
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<td>Operating expenses</td>
<td>862,000</td>
<td>1,133,000</td>
<td>1,260,000</td>
<td>1,606,000</td>
<td>1,996,000</td>
<td>2,189,000</td>
<td>2,316,000</td>
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<td>Depreciation</td>
<td>521,000</td>
<td>629,000</td>
<td>734,000</td>
<td>873,000</td>
<td>1,058,000</td>
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<td>Net physical investment*</td>
<td>4,656,000</td>
<td>4,900,000</td>
<td>5,209,000</td>
<td>5,838,000</td>
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<td>Net profit before tax and interest payments</td>
<td>676,000</td>
<td>923,000</td>
<td>1,394,000</td>
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<td>1,992,000</td>
<td>2,407,000</td>
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<td>Profits as percentage of net investment*</td>
<td>14.5%</td>
<td>18.8%</td>
<td>26.8%</td>
<td>30.4%</td>
<td>33.2%</td>
<td>37.6%</td>
<td>37.7%</td>
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</table>

**Source:** McLeod, Young, Weir, Ltd., and Wood Gundy, Ltd., *A Review of Premier Cablevision, Ltd.*, Toronto, 5 October 1971.

* Estimates.

### Table B-2. Victoria Cablevision, 1966-1972

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<td>Subscribers</td>
<td>nk</td>
<td>27,528</td>
<td>34,681</td>
<td>39,759</td>
<td>43,535</td>
<td>45,270</td>
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<td>Revenues</td>
<td>$894,000</td>
<td>$1,153,000</td>
<td>$1,500,000</td>
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<td>$1,863,000</td>
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<td>Operating expenses</td>
<td>391,000</td>
<td>472,000</td>
<td>617,000</td>
<td>685,000</td>
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<td>Depreciation</td>
<td>127,000</td>
<td>166,000</td>
<td>206,000</td>
<td>241,000</td>
<td>277,000</td>
<td>291,000</td>
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<td>Net physical investment*</td>
<td>847,000</td>
<td>$1,107,000</td>
<td>1,373,000</td>
<td>1,607,000</td>
<td>1,847,000</td>
<td>1,900,000</td>
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<td>Net profit before tax and interest payments</td>
<td>376,000</td>
<td>515,000</td>
<td>677,000</td>
<td>791,000</td>
<td>904,000</td>
<td>930,000</td>
<td>935,000</td>
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<td>Profits as percentage of net investment*</td>
<td>44.4%</td>
<td>46.5%</td>
<td>49.3%</td>
<td>49.2%</td>
<td>48.9%</td>
<td>48.9%</td>
<td>46.8%</td>
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**Source:** McLeod, Young, Weir, Ltd., and Wood Gundy, Ltd., *A Review of Premier Cablevision, Ltd.*, Toronto, 5 October 1971.

* Estimate.

nk: Not known.
Table B-3. Coquitlam Cablevision, 1966–1972

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<td>8,703</td>
<td>12,187</td>
<td>16,407</td>
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<td>Revenues</td>
<td>$174,000</td>
<td>$272,000</td>
<td>$430,000</td>
<td>$609,000</td>
<td>$820,000</td>
<td>$961,000</td>
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<td>Operating expenses</td>
<td>115,000</td>
<td>136,000</td>
<td>221,000</td>
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<td>356,000</td>
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<td>Depreciation</td>
<td>54,000</td>
<td>75,000</td>
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<td>Net physical investment*</td>
<td>360,000</td>
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<td>653,000</td>
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<td>1,040,000</td>
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<td>Profits as percentage of</td>
<td>1.4</td>
<td>12.2</td>
<td>17.0</td>
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nk: Not known.

Table B-4. York Cablevision, 1968–1972

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<td>$256,000</td>
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<td>Operating expenses</td>
<td>416,000</td>
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<td>Net physical investment*</td>
<td>713,000</td>
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<td>2,387,000</td>
<td>2,500,000</td>
<td>2,760,000</td>
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<td>Net profit before tax and</td>
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nk: Not known.
vision's annual revenues are employed for local programming. Similarly, the authors are not aware of attempts by Premier to secure cable television licences in "noneconomic" (rural) areas.

A case, perhaps, could be made that Premier has been technologically innovative. Canadian Wirevision was a pioneer in developing two-way cable. Cascade was created, in part, to develop special equipment needed for large city cable systems (see chapter II on technical problems faced by large systems). On the other hand, however, it also could be argued that much of the revenues spent on technical improvements is not necessarily improving the service given to current subscribers but, rather, is being used to prepare the way for future services for which subscribers will be required to pay an additional fee (pay television, converter services, and so forth). In short, it remains to be determined whether new investments in the Premier systems are a consequence of the high levels of earnings, or whether they would have taken place in any event as a result of marketing decisions.

In summary, evidence supports the hypothesis that unregulated cable profits, in the Premier case at least, have resulted in little strengthening of the broadcasting system.

2. High cable profits have allowed the "Welsh Group" to expand their cable holdings and to diversify into other fields. A significant factor enabling such expansion was the injection of capital by CBS, but, if anything, the acquisition policies of Premier have accelerated since the partial CBS divestiture. Many of these acquisitions are of a kind that will make any form of profit regulation difficult to implement. The electronic equipment used in the Premier systems is manufactured by a partially owned Premier subsidiary (Delta-Benco-Cascade Electronics) and is distributed to the cable subsidiaries by another subsidiary (Fred Welsh Antenna Systems). Similarly, engineering and management consultant advice is supplied by Fred Welsh Antenna Systems. (During 1972, before acquisition by Premier, FWAS received $1,807,000 from the cable subsidiaries.) The minority interest purchased in the Vancouver Canucks and the formation of Canadian Optical Systems could lead to the distribution of hockey games by pay television on the Premier cable systems.

Vertical integration makes regulation much more difficult than it otherwise would be. Any profit regulation of the Premier operations would create an incentive to transfer some of the monopoly profits earned by the cable operations to other vertically related subsidiaries either by contractual arrangements or by accounting practices (such as the allocation of overhead charges). In other words, vertical integration requires the regulatory body to supervise all contractual arrangements in order to ensure effective regulation.

3. The absence of rate regulation in the CATV industry, at least in the Premier case, indirectly is encouraging the formation of multinational enterprise. The Premier cable systems are mature systems with only little potential for growth in terms of increased subscriber penetration. As a business tactic, therefore, it makes more sense to invest revenues generated by the systems in other areas than to reinvest them in the cable systems. The CRTC only encourages and recommends but does not require that some of the monopoly returns generated by cable activities be used to improve the broadcasting system, and so one observes the remaining and greater proportion of these funds entering other industries and other countries. Multinational enterprise itself can impose severe constraints upon attempts at effective regulation.48

4. As a general principle, high levels of retained earnings will not encourage the pursuit of social goals if such activities do not themselves earn a high rate of return. Conversely, low levels of retained earnings will not forecast the pursuit of these goals if they give a high return, as the firm can always borrow funds on the market. Briefly, if social policy is to be carried out through the instrument of private enterprise, the incentives must be structured in such a way that the firms find it to be in their economic interest to pursue such goals. The philosophy of structuring incentives in this manner appears to have escaped the CRTC.

Cable has not been regulated by the CRTC as a separate entity but rather as an important and vital part of a "single broadcasting system." The regulation to date has been only with regard to safeguarding the over-the-air system. The philosophy of such regulation has been culturally oriented and not economically oriented. (It will be hypothesized in chapter XV that economic considerations have an important role to play in implementing cultural goals.) The concern of the CRTC for the cultural sovereignty of Canada is an extremely important and valid concern of the federal government; regulation of cable television in the context of its cultural impact, however, may not be sufficient.

Part III

CABLE TELEVISION AND
BROADBAND COMMUNICATIONS
Introduction and Industry Structure

INTRODUCTION

Cable television has the potential of developing into a two-way, wide-band telecommunications system offering a much larger range of services than are at present available from either the cable television systems or the telephone companies. Such development has to date been blocked by the restrictive practices of the telephone companies who see cable television as a potential competitor and by the fragmentation of jurisdiction between levels of government and among governmental agencies. This fragmentation of governmental authority has meant that the telephone carriers have been allowed to regulate the development of cable television in accordance with their own desires and has removed government from an important planning role over the development of cable television. At the same time the increase in the variety of services that could be provided by a fully developed cable television system has created demands for provincial jurisdiction, thereby increasing pressures for increased fragmentation of authority.

As the coaxial cable used in cable television systems possesses roughly three hundred times the capacity of copper paired wire used by the telephone companies to connect the telephone to the telephone...
switching centre, many have predicted the evolution of present day CATV systems into high speed and high capacity tele-data processing and information distribution systems offering services well beyond the capacity of the present day telephone network. Programs that could be provided in such a "wired city" or "wired nation" environment include shopping and banking from the home, facsimile transmission of mail, newspapers, data, and the like, automatic meter reading, home library services, alarm systems, computers for home use, two-way television for educational or polling purposes, pay television, and so forth. Given the capacity of coaxial cable to handle messages, any information that can be encoded in the form of electronic pulses could be delivered to the home on request.

Some view technological developments such as those listed above as having a liberating, "democratizing" influence. Whereas the past forty years have seen tremendous growth in the electronic mass media, technology is now permitting the development of interactive media, such as CATV, video cassettes, information retrieval systems, and computer services. The former technologies have had an homogenizing effect upon people and have tended to produce "mass man," whereas the latter may have a liberating impact since they are adaptable to the needs and wishes of the individual.1


Consider, for example, these remarks by Cowan: "(A two-way system of broadcasting implies) in the wired city concept, offering a multitude of programming choices, consumers take part in disentangling broadcasting, freeing it from the domination of public agencies on the one hand and by business on the other, making it...an agency of so-

At present there are two contenders for control over broadband communications hardware—the telecommunication common carriers (telephone companies) and the cable television companies. Policy decisions will have to be made as to how much competition and how much monop-

olly are desirable in the communications industry, and perhaps more importantly, as to how one resolves such an important issue. These questions have forced answers from the federal government in other contexts, for example the licensing of the private television network, CTV, and more recently Global, in competition with the publicly owned network, the CBC, and again with regard to competition in interurban communications through the licensing and regulation of Canadian National/Canadian Pacific Telecommunications (CN/CPT) as long-haul competitors to the established telephone carriers (members of the Trans-Canada Telephone System). In many ways the questions that must be answered regarding the role of cable in intraregional communications parallel the question that had to be answered regarding the ac-

tivities of CN/CPT in interurban communications.

The question of cable television competition for the telephone companies is important in its own right, as the decision eventually taken will determine in large measure the rate of growth and the structure of the intraregional telecommunication industry, and whether a monopoly model or a partially competitive model is followed will have a great impact on the performance of the telecommunications industry as regards intraregional communication.

In addition, however, the cable television/telephone company competition also illustrates certain dynamics of technological change.

1. Technology redefines the limits of power of governments and govern-

ment agencies so as to (a) create voids in certain fields that are inter-depended with areas that are well defined in terms of jurisdiction so as to create anomalous results, and (b) to create overlapping areas of jurisdiction such that conflicts appear, both between levels of government and among governmental agencies, again so as to produce anomalous results. In the particular case under examination, cable television is forcing a redefinition of jurisdiction between the federal and provincial governments and the pressures are toward decentralization of power in the political field.

2. Technology redefines the areas of monopoly and competition, but before one can invoke, in Schumpeterian fashion, "the gales of creative destruction", participatory democracy, available to ordinary citizens for the exchange of ideas, the governed to talk to their governors, public servants to account to the public they serve, consumers to confront producers. Until now, broadcasting has been largely a one-way channel of communication where the governors talk to the governed, the experts dispense their particular expertise and sellers brainwash buyers."
destruction" as a palliative against the abuse of monopoly, it is necessary to resolve the conflicts in point 1. If technological change is rapid and continuous, such resolution may prove illusory. In the particular case under examination, cable television is forcing a redefinition of monopolistic and competitive markets, but, due to the jurisdictional vacuums noted in point 1, the monopoly corporation (telephone company) has been able to block the development of its potential rival, even though the pressures are toward deconcentration in the industrial field.

The following major conclusions are reached specifically regarding the communications industry:

1. A technological impasse exists with regard to intraurban communications due to private restrictions on the one hand (imposed on cable systems by the telephone companies) and perverse governmental regulatory arrangements on the other.

2. Technological change is ineffectual in reducing the extent of monopoly in the communications field unless supported by rational and activist policy by government.

3. Great care must be taken that the negotiations currently taking place between the federal and provincial levels of government regarding the redistribution of jurisdictional powers over telecommunications do not further erode the possibilities for rational planning in the industry.

STRUCTURE AND REGULATION OF THE CANADIAN TELECOMMUNICATIONS INDUSTRY

At the end of 1972 there were 1,170 telephone companies operating in Canada servicing 10,987,141 telephones. However, as Table V-1 shows, many of these systems are very small, often serving only a few hundred telephones.

The major telephone companies have formed the Trans-Canada Telephone System (TCTS) to provide a nationwide system of communications and the eight TCTS members collectively account for 91 percent of all Canadian telephones. While each system owns the plant located within its territory, system interconnection permits the provision of a national service.

Revenues are shared according to a complex formula based on the amount of investment in long-haul facilities each system has contributed to the nationwide communications network and long distance call volumes passing through each territory. Smaller systems that are not members of TCTS generally deal directly with the TCTS member in the area. Members of TCTS are shown in Table V-2.

Bell Canada, in addition to its operations in Ontario and Quebec, controls, or has interest in, six other major companies (Newfoundland Telephone, Island Telephone, Maritime Telegraph and Telephone, New Brunswick Telephone, Northern Quebec, and Northern Telephone). The “Bell group” controls about 70 percent of all telephones in Canada, with Bell Canada itself controlling over 60 percent. East of Manitoba, the Bell group controls 95 percent of all telephones, with Bell Canada itself controlling 85 percent.4

General Telephone and Electronics of the United States controls Oka­nagan Telephone Co., British Columbia Telephone Co., and Quebec Telephone Co., and in 1971 this “GTE group” controlled 11 percent of all telephones in Canada.5 Most of the remaining 19 percent of tele­phones in Canada (that is, the non-Bell and non-GTE phones) are controlled by the provincially owned telephone companies: Manitoba Tele­communications equipment manufac­turers. Northern Electric is a subsidiary of Bell Canada, and Northern in turn controls several subsidiaries, while British Columbia Telephone Company, Automatic Electric (Canada), Ltd., Syl­vania Electric (Canada), Ltd., and Lenkurt Electric Company (Canada), Ltd., among others, fall under the common ownership of General Telephone and Electronics International, Inc. (United States).6

The Canadian telephone industry employs 72,600 people, represents a gross investment of $8 billion, and receives yearly revenues of over $1.87 billion. The telephone companies, in addition, control over 70 percent of all the coaxial cable used in CATV systems.7

By way of contrast, revenues accruing to the CATV industry in 1972 were $79.7 million and projections for 1974 are for $116 million.8 Compared to the telephone industry, CATV is still relatively unconcentrated, but the CRTC, in spite of public statements to the contrary, is doing little to arrest the trend toward concentration. In 1973 Maclean Hunter owned 13 cable systems and its 187,037 subscribers represented 8.8 percent of all Canadian subscribers. The Premier group controls four large cable systems (plus a smaller system), which in turn accounted for 300,246 subscribers or 14.1 percent of all subscribers in 1973. Fi­nally, Canadian Cablesystems, Ltd. has ownership interest in nine cable companies that in 1973 had 291,657 subscribers or 13.7 percent of all Canadian subscribers. All three companies are conglomerates. Maclean Hunter is perhaps Canada’s largest publisher and it also has extensive broadcast holdings. The Premier group has ownership in a hockey team and cable systems in England, Ireland, and Hawaii. Canadian Cablesys­tems has ownership in British Columbia Broadcasting System, Ltd. (CHAN-TV), Bushnell Communications, Ltd. (which in addition to C/O/TV owns two large Ottawa area cable systems itself), Famous Players Theatres, and Agra Industries, Ltd. In short, three cable com­panies account for almost 40 percent of the industry and these three


5. However, it has been announced that the British Columbia government intends to nacional­ise B.C. Telephone.


7. Bell Canada and its subsidiary, Northern Electric, share ownership of Bell-Northern Research (BNR), a company incorporated in 1969 to carry on research and develop­ment in the telecommunications field. Bell Canada holds 24.6 percent of the shares of Telexan Canada, an investment of $14,757,000.

### Table V-3. Major Public Cable Companies

<table>
<thead>
<tr>
<th>Cable company</th>
<th>Cable systems owned by company</th>
<th>1973 subscribers</th>
<th>Subscribers as percent of Canadian total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Premier</strong></td>
<td>Canadian Wirevision</td>
<td>169,431</td>
<td>8.0</td>
</tr>
<tr>
<td></td>
<td>Victoria Cablevision</td>
<td>54,456</td>
<td>2.6</td>
</tr>
<tr>
<td></td>
<td>York Cablevision</td>
<td>51,436</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>Coquitlam Cablevision</td>
<td>24,923</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>260,246</td>
<td>14.1</td>
</tr>
<tr>
<td><strong>Canadian Cablesystems</strong></td>
<td>Metro Cable TV</td>
<td>76,744</td>
<td>3.6</td>
</tr>
<tr>
<td></td>
<td>Grand River Cable</td>
<td>70,041</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td>Hamilton Coaxial</td>
<td>29,624</td>
<td>1.4</td>
</tr>
<tr>
<td></td>
<td>Cornwall Cablevision</td>
<td>11,722</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>London Cable TV</td>
<td>30,026</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>Pine Ridge Cable</td>
<td>18,474</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>Jammar Cable TV</td>
<td>22,752</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>Chatham Cable TV</td>
<td>7,319</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>Alberni Cable</td>
<td>4,901</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>291,657</td>
<td>13.7</td>
</tr>
<tr>
<td><strong>Maclean-Hunter</strong></td>
<td>M.H. Toronto</td>
<td>54,077</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>M.H. Thunder Bay</td>
<td>22,355</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>M.H. St. Catharines</td>
<td>12,858</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>M.H. London</td>
<td>22,459</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>M.H. Joseph</td>
<td>17,397</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td>M.H. Hamilton</td>
<td>10,335</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>M.H. North Bay</td>
<td>3,284</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>M.H. Owen Sound</td>
<td>5,699</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>M.H. Midland</td>
<td>4,936</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>M.H. Collingwood</td>
<td>2,224</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td>M.H. Huntsville</td>
<td>1,427</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td>Peterborough Cable</td>
<td>35,683</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>Haron Cable TV</td>
<td>14,208</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>187,037</td>
<td>8.8</td>
</tr>
</tbody>
</table>

**Total: 6 largest public companies**

<table>
<thead>
<tr>
<th>Cable company</th>
<th>Cable systems owned by company</th>
<th>1973 subscribers</th>
<th>Subscribers as percent of Canadian total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sellerk Holdings</td>
<td>Greater Winnipeg</td>
<td>25,823</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td>Ottawa Cablevision</td>
<td>60,500</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td>Coquitlam Lethbridge</td>
<td>7,000</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>Lake Superior Cable</td>
<td>7,500</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100,823</td>
<td>4.7</td>
</tr>
<tr>
<td>Cablecasting Ltd.</td>
<td>Allview Cable Service</td>
<td>9,510</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td>Graham Cable TV</td>
<td>14,043</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>Greater Winnipeg</td>
<td>25,823</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td>Calgary Cable TV</td>
<td>26,900</td>
<td>1.3</td>
</tr>
<tr>
<td></td>
<td>Huron Cable TV</td>
<td>14,208</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>Adelaide Radio &amp; Tel.</td>
<td>892</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>91,476</td>
<td>4.3</td>
</tr>
<tr>
<td>Bushnell Communications</td>
<td>Laurentian Cablevision</td>
<td>14,681</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>Skyline Cablevision</td>
<td>23,071</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>67,752</td>
<td>3.2</td>
</tr>
</tbody>
</table>


* Greater Winnipeg Cablevision appears twice.

† Premier also controls Oakville Cablevision.

Companies have entered many unrelated activities. Concentration of control in the cable television industry is shown in Table V-3.

Revenue and profit data by revenue group, as displayed in Table V-4, illustrate a movement toward concentration in the industry. Whereas in 1971 there were 21 firms with revenues over $800,000 per year, accounting for 76 percent of industry profits, in 1973 there were 33 firms with revenues over $800,000, and these companies accounted for 82 percent of industry profits in that year.

Brief mention should be made of two other telecommunications carriers in Canada. Canadian National/Canadian Pacific Telecommunications, by far the largest of the telegraph and cable companies in Canada, is owned by the two large railways. It is a competitor for the members of the Trans-Canada Telephone System in the provision of teletypewriter exchange services, long distance data transmission, the provision of microwave facilities for broadcasters, and other services. Through ownership of Computer Sciences (Canada), Ltd., CN/CPT has vertically integrated to the computer services industry.

Telesat Canada, the communications satellite corporation, is jointly owned by the federal government and the major common carriers, the latter group including both members of the TCTS and their major competitor CN/CPT. Telesat's customers to date include Bell Canada and the Canadian Broadcasting Corporation for the provision of telephone and television distribution facilities, respectively, to the north; RCA Global Communications for the provision of communications links to

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9. Corporate growth through time of Premier Cablevision is discussed at length in Appendix B.
ponder (including earth station facilities). Such arrangements make un-
likely. In fact, Telesat’s leasing policies make such competition im-
possible. The satellite corporation will not lease less than one full trans-
ponder (36 MHz at 35 dBw) to any single customer. A transponder is
capable of transmitting 70 megabits of digital data, or two television
channels, or 1,000 one-way telephone conversations. The minimum
lease period is 5 years and the charges are $3 million per year per trans-
ponder (including earth station facilities). Such arrangements make un-
economic the direct purchase of Telesat facilities for potential customers
whose needs do not call for a full transponder on a dedicated basis for a
five-year period. The common carriers themselves, however, are able to
lease the minimum capacity, fragment the channels, and then resell the
fragmented channel to customers on a needs basis. No private concern
has yet been able to resell satellite capacity as the carriers form an im-
portant revenue base for Telesat with the result that the satellite corpo-
ration appears to have been willing to abide by such restrictions.

The Canadian telecommunications industry exhibits monopoly ele-
ments (in public telephone, cable television, and telegraph services),
dupole elements (in the competition for private lines and broadband
services), and competitive elements (the computer utilities); Canadian
private ownership (Bell Canada), foreign private ownership (GTE), and
public ownership (Manitoba, Saskatchewan, and Alberta systems); verti-
cal backward integration (Bell’s ownership of Northern); and vertical
forward integration (the carriers' ownership of Telesat, and Canadian National/Canadian Pacific's ownership of Computer Sciences, Ltd., a computer service bureau).

The two major telephone companies, Bell Canada and BC Telephone, are incorporated under federal charter, and both companies consequently are regulated by the Canadian Transport Commission (CTC), a federal body which is also charged with the regulation of CN/CPT. The regulatory powers of the CTC are derived from the Railway Act and the acts incorporating the companies. The CTC regulates these two carriers by traditional rate of return on an approved rate base methodology and has not been empowered to consider broader questions such as the relations between the carriers and other firms in the industry (such as CATV, computer utilities, equipment manufacturers) or broad questions of communications policy for Canada.

The remaining telephone companies (including the telephone subsidiaries of Bell and BC Tel.) fall under provincial jurisdiction and in most cases are regulated by special provincial commissions. Saskatchewan Telecommunications has no special supervisory board, but instead reports directly to the provincial government.

The federal Department of Communications (Communications Canada) has the responsibility of licensing all users of the radio spectrum, and therefore the federal government has at least some control over the activities of the provincially incorporated carriers since it must approve all uses of microwave. These powers have their origin in the Radio Act. In addition, the DOC passes on technical standards for CATV and broadcasting stations. Under the Department of Communications Act, the DOC is also to "coordinate, promote and recommend national policies and programs with respect to communication services in Canada" and "plan and coordinate telecommunications services for departments, branches and agencies of the Government of Canada." However, since the jurisdiction over cable, telephone, telegraph, and broadcasting has, in large measure, been given to other agencies, the DOC is more of an advisory body than a planner with real authority.

20. For a compilation of broadcasting regulations see Grant, Broadcasting and Cable Television Regulatory Handbook, vol. 1.
VI Telephone and Cable Technologies as Forerunners of the Wired City

TECHNOLOGY

Experts feel that the technology to be used in the wired city in the period 1985-1990 is now well known and that creation of the wired city only will involve the synthesis of already existing communications systems. A switched system uniting coaxial cable and copper pair cable into a more complete system, for instance, would be capable of accommodating many more services than are current systems.¹

Current telephone systems have been designed for voice communications, and so are unsuitable for "total" communications. Such systems do, however, possess the advantages of complete switching and can transmit bi-directionally. The use of pairs of copper wires in the local distribution facilities (or local "loops") of these systems, however, means that their bandwidth or message-carrying capacity is severely limited, and for this reason they must be limited to voice or low speed data. The typical usable spectrum or bandwidth for a copper pair is 1 MHz; by way of contrast, a single television signal requires 6 MHz of bandwidth, which is equivalent to 600 telephone signals.

Briefly then, the present telephone systems are capable of voice information, data, and slow-scan television signals. These systems utilize space division multiplexing (one pair of conductors required for each service) with centralized switching. Long-haul transmission facilities consist of coaxial cable or microwave. Signals pass through the telephone system in analogue² form and, except for local loops, frequency division multiplexing is used.³

By way of contrast, existing CATV systems have 300 MHz of useable bandwidth and are able to carry thirty or more television channels. However, cable television systems have no switching facilities, so that at present it is impossible to address messages to particular households. Coaxial systems thus far are used only for local distribution and there is no long-haul interconnection of systems. Present CATV systems generally are incapable of bi-directional transmission. These systems employ frequency division multiplexing exclusively.

It is not known exactly what the telephone companies plan to do with coaxial cable over the next ten to fifteen years. While they have publicly stated as recently as 1970 that they were "giving consideration" to implementing a switched coaxial cable system over that time span,⁴ spokesmen for Bell Canada quite recently have stated that the company has no plans to extend the broadband network except to "meet emerging needs" and that coaxial cable in every home "is [not] a require-

² Electrical signals can be in either analogue form or digital form. The former is continuous in time, the latter is discrete in time, that is, on-off. The DOC has defined the systems as follows: "(Analogue transmission means that) there is a continuous flow of signals in a form analogous to what goes in at one end and comes out at the other. In analog transmission systems, care has to be taken to avoid interference when different types of signals are multiplexed (carried together), and noise and distortion are cumulative from repeater to repeater. . . . (Digital transmission means that) signals are transmitted . . . by the use of binary numbers . . . Signals in digital form must therefore be broken down to components that can be expressed in only two ways—yes or no, present or absent, on or off. Answers such as perhaps or go slow can be derived only from a particular balance of positive or negative components. Analogue signals . . . can be transformed into digital signals by a series of operations known as Pulse Code Modulation (PCM). This permits the interleaving of several thousands of signals, which are encoded into the original analog form at the other end (that is to say, at the point to which they are directed)." The advantages of this digital form of signal distribution are that distortion is virtually eliminated and, although repeaters are required, noise and distortion are not cumulative as they are in other forms of transmission. By use of regenerative repeaters, digital signals can be transmitted over very great distances with negligible degradation. The proliferation of digital computers has resulted in a rapidly growing demand for many types of digital terminals." DOC, Instant World, pp. 14-15.
³ In order to keep separate electrical messages (that is, to avoid interference) several techniques can be used; (a) space division multiplexing (SDM), whereby separate cable and amplifiers are used for each message; in broadcasting, transmitters geographically distant are space division multiplexed; (b) time division multiplexing (TDM), where messages are broadcast at separate moments in time; in principle, many users can share a line and each can receive messages or fractions of messages for microseconds, after which other users receive their messages, and the economy achieved using this method is through the sharing of facilities; (c) frequency division multiplexing (FDM), whereby the messages use the same cable plant but may be separated due to their different frequencies; (d) a fourth system, known as the closed loop system, combines FDM and TDM. See TV Communications, January 1969, pp. 90-95.
moment today and . . . it is [not] going to be a requirement for some

time.16

Many of the new services discussed in the previous chapter are de­
pendent upon the integration of coaxial cable capacity with the tele­
phone switching centre. At present, most municipalities have both a
switched system and a coaxial cable system, but the two systems are not
integrated. Some experimentation has been underway in the United
States over the last few years with regard to the construction and oper­
ation of switched cable television systems. Such systems generally have
employed one of two diverse technologies—the “Rediffusion Dial-a-Pro­
gram” technology, or the “Ameco DISCADE technology.”16

Rediffusion employs twisted wire (rather than coaxial cable) but
switching units allow the viewer to select the channel he wishes, which
then is delivered to his home. Each subscriber is connected to a local
exchange which serves 336 subscribers. Each exchange has a 36 channel
capacity at present but viewer choice could be extended to 72 or 108
channels by paralleling exchanges. The technology permits the same de­
gree of privacy for point-to-point communications as does the telephone
network.

Investment per subscriber for the Rediffusion system is estimated at
$186, assuming a 100 percent subscription rate, a medium-density sin­
gle-dwelling community, and a multiple subscription rate of 40
percent. Investment in telephone plant and equipment per subscriber,
by way of contrast, is $450-$600 depending upon which telephone sys­
tem is studied. The telephone investment figures, of course, include ex­
tensive long-haul, system-interconnection facilities.

The DISCADE system employs switching units that are spliced into
the coaxial cable distribution system in a manner similar to amplifiers.
A switching unit serves up to 24 subscribers. Rather than a single large

5. See testimony before the Canadian Transport Commission (CTC) by Mr. Gagnon
(vice-president and general manager of the Montreal area, Bell Canada).
Mr. O’Brien (lawyer for Ottawa Cablevision). Q. Could you give me some indica­
tion as to when Bell Canada might be in a position to supply some of the future serv­
ces, which you have earlier described?
Mr. Gagnon. A. Well, I think I mentioned before that it is our intention to extend
our broadband network to meet the emerging needs for these particular services. We
have no specific timetable. We have no specific costs—if you consider the require­
ment as being for two-way audio-visual in every home, quite frankly, I don’t believe that this
is a requirement today and I don’t think it is going to be a requirement for some

CTC, Telecommunication Committee, Transcripts of Public Hearings, case T-3/73,

6. John E. Ward, “Present and Probable CATV Broadband Communications Technol­
ogy” (Report prepared for the Sloan Commission on Cable Communications, ESL-R-
449, January 1971), pp. 3-14 to 3-19, and B-1 to C-12.

7. Ibid., pp. 3-17.

8. Ibid., pp. 3-19. The possibilities of implementing a switched broadband system for
nationwide communications needs by using cable television and domestic communica­
tions satellite technology is discussed in Alphonse Chayes, “The Impact of Satellites on Ca­
bile Communications” (Report prepared for the Sloan Commission on Cable Commu­
nications, May 1971).
to dispose effectively of any competitive threat from the latter simply by refusing to renew the leases.

There may be several advantages to an approach that would give the common carriers complete control over the broadband network. Such possible advantages are described by the TCTS in submissions to the Telecommission and are listed below:

1. Absorption of cable services by the telephone companies would avoid wasteful duplication of facilities. Were two coaxial systems to serve identical territories (one devoted to telephone and related services, the other to cable television and related services), there is a possibility that neither would be used to capacity, and hence provision of the services would be more costly than it would be if only one system that could be used to capacity were present.

2. Control over CATV by the common carriers would lend itself to the “functional dissociation of the message content from the control of the means of transmission.” This argument is intended to reflect the fact that CATV systems currently are encouraged to originate their own programming. However, one should quickly add that there is a growing practice of turning over some CATV channels to common carrier use. For example, systems regulated by the New York City Public Service Commission are required to provide two such public access channels on a nondiscriminatory lease basis, and in 1974 this was to have expanded to four.

Also such an approach, that is, a limited common carrier status for CATV, has been recommended as a means of providing the financial base to encourage CATV to expand into nonvideo functions. With the very great message carrying capability possessed by coaxial cable, there may not be any great harm in allowing the owner of the cable to have control over the messages flowing on a very small portion of the spectrum.

3. Integration of the wideband system with the telephone switching system “utilizing the existing capabilities of the telephone system would be conducive to an orderly and speedy development of the network.”

If the communications system requires planning, and if such planning can best take place within a regulated monopoly structure, and if competition interferes with the planning process in such a way as to be against “the public interest,” such integration should be considered desirable. While such development would no doubt be “ orderly,” it is open to question whether it would be “speedy.” To the latter point we shall return directly.

4. Since the telecommunications carriers have years of experience and knowledge derived from the provision of communications services, they may be best suited to implement expanded communications capacity through coaxial cable. The carriers have established rights of way and can add to capacity incrementally, whereas a cable firm must add to its capacity in sizable steps and, unless it relies on those of the carriers, must negotiate new easements and rights of way.

5. In order to supply service in all areas at reasonable rates, it is necessary to invest the coaxial cable technology with that of the common carriers who are in a position to undertake a system-wide averaging of costs and rates and thereby subsidize the areas with low revenue potential with revenues derived from areas with high revenue potential. As chapter IV has shown, the chances of rural areas receiving CATV service under current costs and regulatory patterns are slim. Cross-subsidization through the monopoly corporation would be one way of extending its availability.

6. The final argument noted here in favour of the absorption by the

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10. Ibid.
Carriers of CATV is now quoted fully from the TCTS's brief to the Telecommission.

Federal Government regulating powers under the Broadcasting Act do not extend to cover all the activities permitted under the CATV Company's Charter. In the absence of Provincial Legislation, a CATV Company which owns its own cable, is potentially unregulated in data transmission and private wire services.

The Federal Government, by passing Bill C-11, has indicated an intention to regulate private wire and data transmission services provided by federally regulated carrier companies. If federally regulated companies own the cable, the federal regulatory power indirectly extends to CATV companies served by these carriers through the contract restrictions of the federal carriers.

Similarly, any future regulation of private wire and data transmission services by Provincial Governments would be facilitated if the provincially regulated common carrier companies owned the cables used for CATV distribution networks.17

In other words, if the governments do not possess the capacity to regulate, Bell certainly does. In addition to providing regulated common carrier services, Bell itself would like to become the designated regulator of communications services.18 As will become apparent, the carriers do now in effect possess a great deal of regulatory control over cable television firms and have not been reluctant to exercise this power. While regulation generally is felt to be best implemented directly by governmental bodies in an effort to promote the public interest, the TCTS' policy proposal provides an interesting type of arm's length governmental regulation.

However, in spite of the possible benefits that may accrue to society through a policy of allowing the carriers to gain complete control over CATV, mention also should be made of certain disadvantages that may flow from such an approach. Two such possible disadvantages now are discussed; first, full integration may slow technological advance, and second it will increase the powers of the carriers to implement restrictive trade practices in competitive sectors.

1. TCTS states that paired copper cable possesses sufficient bandwidth to provide service for all of today's two-way communication needs, including telephone and video phone.19 For future needs it suggests that the voiceband network (copper pair) and the wideband network (coaxial cable) complement each other through the maintenance of the switched two-way telephone and one-way wideband services. TCTS also feels that switched coaxial cable service is not at present economically feasible.

In the United States, however, the Federal Communications Commission is requiring some limited two-way capability for CATV systems, and New York City is demanding that its cable systems possess the message filtering capacity so that video programmes may be "addressed" to local neighbourhoods, school districts, congressional districts, and so forth, and that the systems have the capability of transmitting simultaneously signals to one or more of these districts, the area to receive a particular programme to be determined by the message itself.20 From this degree of development it is not difficult to foresee a time when each individual household will be able to receive electronic messages "addressed" specifically to it.

Therefore, many of the new services can be provided by a broadband network with filtering capacity but without a switching system. All that is lacking in a system with filters allowing for discrete message delivery capability is the capacity for each individual subscriber to send (rather than receive) information requiring a large bandwidth to a selected household. Voice-grade messages can be sent to individual subscribers via the telephone system; wideband messages can be sent to a central source by means of the coaxial cable system; however, wideband messages cannot be sent from individual to individual without the switched coaxial system.

The telephone systems, however, believe that coaxial cable should remain, for the present at least, as a one-way, mass distribution system, and they have employed restrictive contracts to ensure that such remains the case. And in the meantime, they are laying plans to introduce a wider bandwidth "to meet emerging needs."21

2. Full integration may increase the opportunities for unfair competitive practices by the carriers in other areas and inhibit technological advance in industries vertically related to communications distribution.

18. The passive role envisaged for government by Bell Canada is further seen in the following quotation: "In a regulated industry, such as telecommunications, it is extremely important that the regulating authority realize that its interface with the carrier is only at the periphery of the decision-making process. Direct intervention by government into the management process by giving the regulatory authority (powers of) "approval for any item of capital expenditure above an amount which might be left to the regulatory body to determine from time to time" is unacceptable. Since Bell Canada must satisfy its customers by providing good service, the planning and management responsibility rightfully belongs with the Company." Bell Canada, "Proposals for a Communications Policy for Canada, Computer/Communications Policy: A Response by Bell Canada," November 1973, p. 32. Bell is quoting from Proposals for a Communications Policy for Canada, A Position Paper of the Government of Canada, p. 18.
Both of these possibilities originate in the monopoly position of the telephone companies over the communications wires and involve the interconnection policies of the monopolized public system with private communications systems and with terminal devices. The past policies in this matter have been summed up as follows: "The TCTS Companies have continued to oppose the acoustical or hard-wired connection of a radio system to the public switched network as a general practice for other than public emergency services. This position has not necessarily been maintained so much from a technical aspect as from the economic concern that such a precedent would establish for systems interconnection. . . . To allow private systems to interconnect in this way leaves the carriers reduced revenues to offset the costs of providing public calling and erodes the revenue base on the long haul circuit by-passed by the private user." 21

On the other hand, CN/CPT generally allows interconnection of private systems with its network and, similarly, the smaller telephone systems are said to be more flexible. The only requirement is that such systems be technically compatible with the public systems. 22 The common carriers possess "almost complete discretion" on interconnection. When private-line circuits are leased from the TCTS members there appears to be little difficulty in obtaining interconnection privileges. It seems then that the telephone companies are able to maintain a competitive advantage in the provision of private lines through their monopolized public switched network service. 23 Such policies serve to limit competition not only in the provision of private lines but also in research and development efforts by independent equipment manufacturers. 24

Similar restrictions often apply to the attachment of "foreign terminal devices," although they are less severe. TCTS has rigid interface equipment requirements, the interface equipment being owned by the telephone companies, in order to maintain the "integrity" of the switched network. Some feel that these attachment requirements unnecessarily impede technological advance since the carriers often appear to be slow in responding with new interface equipment when new requirements arise. Also "the requisite protective devices give the carriers an unfair competitive advantage by adding to the cost of user-owned systems, costs which indeed cannot even be calculated for a new device until the carrier has designed and costed the requisite interface buffer." 25

In the United States the Federal Communications Commission in the past has "accepted tariffs which prohibit customer-owned equipment from being attached to the carrier's switched lines. The carriers have employed these tariffs to exclude plastic covers for telephone books, shoulder telephone rests and hush devices." 26 In Canada such tariffs have not been regulated at all until quite recently.

It is evident that as the traffic handling capacity of the communications system is enlarged through coaxial cable, the number and variety of foreign devices seeking attachments will grow, simply because the network will have the capacity to handle more data of a higher informational content. The consequences of continued monopoly of distribution in this context now is discussed at length by using the example of computer-communications.

In March 1971 Bell Canada announced the planned creation of a new computer-communications division, and anticipated investments of up to $200 million in new data communications facilities over five years. 27 In the same month TCTS announced the construction of a nationwide digital transmission network for data communications. TCTS also is developing a new digital terminal device to connect computer equipment to the new digital network. 28

The Trans-Canada Telephone System members also have expressed an intention to enter the computer services field:

Regulated Telecommunications Carriers should be permitted to participate in providing computer services because good communications regulation will ensure they have no preferred position re. computer processing. Hence, they should be treated as an equal. Subsidiary operation should further ensure this. 29

In essence, the computer is a highly sophisticated terminal. As the country needs more computer power, and as this is the problem we are trying to

23. Ibid., p. 153. In fact, TCTS does not allow interconnection for CN/CPT's broadband data-transmission service, which severely limits CN/CPT's ability to compete for private-line service. The telecommunication carriers use the issue up in the following terms: "In general, there are grounds for supposing that, except for private systems leased entirely from the telephone companies, interconnection with the public switched network is difficult to obtain and is the exception rather than the rule, and that this attitude appears to be governed more by commercial than by technical issues." Ibid., p. 155.
25. DOC, Instant World, p. 157. The report adds, "For the manufacturers of telecommunications terminal equipment, the inter-connection practices of the carriers appear to add one more economic hurdle to the successful marketing of Canadian products." Ibid., p. 155.
28. Ibid.
29. TCTS, "Relationship between Common Carriers, Computing Companies and Information Data Systems," Submission to Telecommunication Study # 8 (a, c, e), Part 2, p. 7.
solve, then anyone capable of providing this power, including telecommunications carriers, should be permitted to do so. Of course, other considerations and options enter, e.g., the possibility that large companies might manipulate computer service and telecommunications costs to their advantage.

These are separate problems. If there is a fear of monopoly or unfair competition, then the government should legislate or regulate in this context, to ensure that it does not happen, now or in the future. It might be argued, for example, that carriers could use their monopoly position on regulated telephone services to subsidize rates for computer communications facilities, thereby securing an unfair advantage over competitors.20

Rather than awaiting governmental directives on these matters, certain members of TCTS have merged with formerly independent computer service bureaus: The Bell subsidiary, Maritime Telephone and Telegraph Company, purchased the Halifax computer time-sharing centre, Consolidated Computer, Ltd., for an estimated $200,000 and, similarly, Quebec Telephone offers computer time sharing as a part of its service.21

It would be intolerable to allow the carriers to compete in the computer services industry without restriction since regulation in the monopolized sectors could become meaningless and ineffective while, at the same time, cross-subsidization of revenues from the monopolized areas to the competitive areas could severely damage competition in the latter area.

The more serious question is whether the carriers should be allowed to extend their regulated activities into the computer services field. This approach would involve two major problems. First, it would be very difficult to provide effective regulation. As a Department of Communications' report states:

30. Ibid., Part 3, p. 2. It is interesting to note TCTS's response to the obverse question—should noncarrier processors be permitted to provide communication services for computer users? Their answer is generally no, due to duplication and waste of resources that would result from the fact that the telephone companies provide voice, data, and video communications from a single corporate entity; the likelihood of "cream-skimming"; and because "regulation of a multitude of carriers is far more difficult than regulation of a few." Ibid., Part 3, p. 4.

Interest also has been expressed by the TCTS members in entering the broadcasting industry. They state, "While the common carriers have no intention of engaging in broadcasting as such, there would appear to be no reason why common carriers should be excluded from being broadcasters. Common carrier companies have enjoyed a high reputation for ethical conduct and would not relish the distinction of being the only Canadian companies deemed too untrustworthy to be barred from being broadcasters. On the other hand, if a firm principle of governments policy should call for the separation of the medium and the message, and this principle would apply equally well to the broadcasters and the common carriers, the TCTS companies would not object to such a separation of functions." TCTS, "Analysis of Relationship between the Function of Common Carriers," Part 2, p. 7. [Emphasis added.]


Bill C-11 to amend the Railway Act seeks to prevent cross-subsidization by subjecting all telecommunications services offered by the carriers to regulation, and requiring them to demonstrate the validity of the cost allocation on which tariffs are based. Historically, it has always been found difficult to identify these costs, even for particular elements of telecommunications services. For this reason, a tendency has developed to set total rates of return for the entire operation of the carrier, and to question the costs of specific services only when there is evidence of abuse. The enormous complexity of a horizontally integrated computer utility offering raw computer power, communications, and application services might make it extremely difficult for a regulatory body to arrive at a valid allocation of costs.22

It may be added that only now is the Canadian Transport Commission undertaking the first study in Canada of the allocation of costs for various services of the Canadian telecommunications industry. With CTC approval, the telecommunications industry currently is working on the value of service principle of pricing whereby the prices for various services are determined by the carriers' weighting of implicit social, economic, and political factors. Generally, cost relationships are ignored.23 In a major cost allocation study in the United States, the Federal Communications Commission determined that competitive services had been offered at prices that did not recover costs, while prices for monopolized services more than recovered the cost of providing the services plus a reasonable rate of return.24

If the telephone utilities are allowed to proceed with their entries into the computer-communications field, any allocation of costs to services such as is now being undertaken by the CTC would prove to be illusory. The possibilities for competitive abuses on the part of the telephone companies would remain in spite of detailed supervision.

There is a second difficulty in allowing the telephone companies to extend their regulated activities into the computer-communications field. Even if effective regulation were possible, so that Bell could not use its monopoly position in the public message service to harm competitors in the computer-communications services field, one is faced with the anomaly of a competitive industry in which only one of the competitors is regulated as to rates and services. Unless the telephone-owned subsidiaries proved to be


34. Joseph C. Goulden, Monopoly (New York: Pocket Books, 1970), p. 5. The rates of return calculated by the FCC for specific services were: (1) monopolized message toll telephone: 10.0 percent; (2) competitive teletypewriter exchange service: 2.5 percent; (3) monopolized Wide Area Telephone Service: 10.1 percent; (4) competitive telephone grade private line: 6.7 percent; (5) competitive telegraph grade private line: 1.4 percent; competitive TELPAX: 9.0 percent. The overall return of investment was the 7.5 percent permitted by the FCC.
much more efficient than other firms, the regulatory process would tend to make such competition quite weak. Any delays in approval of rate changes would place the telephone competitors at a severe disadvantage.

The policy suggestions put forth by the federal government's Computer/Communications Task Force give little solace to those fearing a takeover of the computer-communications field by the telephone companies. The task force recommends:

Telecommunication carriers wishing to offer data processing services commercially in Canada may do so only under the following conditions:

(i) That such services be offered by a separate affiliate, with officers, staff, equipment and computer facilities distinct from those of the carrier;

(ii) that all communications or other service, provided to the affiliate by the regulated carrier must be tariffed and made available on a non-discriminatory basis to any other customers;

(iii) that the carrier may purchase data processing services from its data processing affiliate but that if it chooses to do so, it must carefully separate and identify such services, and file information as to their precise nature and cost for public inspection by the regulatory body; such costs and all transfer payments from the carrier to its affiliate or vice versa would be subject to regulatory scrutiny and review;

(iv) that except for the restriction in paragraph (iv) above, all data processing services offered by the affiliate would be unregulated.

These recommendations have been accepted in principle by the federal government in its "green paper" on computer-communications.34

The concept of protection of the independent computer utilities from anticompetitive practices by the telecommunications carriers through the creation of an independent, arm's length data processing affiliate subject to no regulation has been met with skepticism by those being "protected." The president of one such company was quoted as saying "let's have hands.'"37

It is difficult, if not impossible, to determine the cost of providing a specific service in telecommunications, as such costing always involves arbitrary allocations of joint or common costs when the service in ques-


35. Ibid.


37. Financial Post, 15 April 1972, p. 35.
In summary, if the telephone companies continue to enter the data processing field, even under the conditions suggested by the Computer/Communications Task Force (that is, through an independent, arm's length subsidiary), it will be impossible to prevent some anticompetitive abuses from occurring through contractual relations between parent and subsidiary. A danger of anticompetitive abuse always exists when only one of the competitors is vertically integrated, as the way is open for the integrated firm to make effective a cost-revenue squeeze upon its rivals. For example, by raising the prices for its monopolized telephone lines to its competitors (and its wholly owned "arm's length" subsidiary) while at the same time lowering the prices charged by its subsidiary for data processing services (thereby causing the prices charged by competing service bureaus to fall also), the telephone utility can cause the profit levels of its competitors to fall without changing the overall price for the service or causing its own overall profits to decline.  

Furthermore, such entry entails the danger that restrictions on interconnections and attachments imposed by the carriers could force subsidiaries in order to prevent excess capacity and allow long-term facilities planning. The logical policy for public interest definition (a) would be to vest ownership of Telesat wholly with the Crown or a private organization not active in interprovincial telecommunications which would be forced to compete with the established carriers. The logical policy for public interest definition (b) would be to vest ownership of Telesat wholly with the carriers in order to attain the full benefits of carrier planning. The actual policy followed, (c) ownership on an equal basis by the Crown, that is, to vest ownership on an equal basis by the Crown, that is, to vest ownership on an equal basis by the Crown, the telephone companies, and to achieve lower rates, or (d) that most of the present and anticipated services could be allocated to the cable television (or more properly "broadband") network would be copies in order that they may offer the two-way services in competition with the telephone companies. The logical policy for public interest definition (b) would be to allow the telephone companies complete ownership of CATV plant except in order that the telephone companies could introduce the two-way widespread services at their pleasure. The actual policy followed, (c) cable television ownership of the electronic equipment and the housedrops and carrier ownership of the distribution cable, has the effect of eliminating the benefits of policies (a) and (b) since the cable companies are unable to compete due to contractual restrictions and the carriers are unable to develop cable technology as they do not own the electronics or the housedrops. The policy does permit the entrance of one group of vested interests (cable companies) into a lucrative field, while eliminating competition for the other group of vested interests (the telephone companies).

sion broadcasting (including educational television), FM broadcasting, shopping in the home, traffic and crime surveillance, "stored television,"45 and selected audience programmes (for example, to doctors or teachers). Services to be allocated exclusively to the telephone network would be those requiring total addressing but little or no video, such as telephone service, picture phone service, voting in the home, meter reading, burglar and fire alarms, and banking in the home. Services that would be suitable for both the broadband network with limited return pulse facility and the telephone network would include facsimile, library books, and computer communications.

Based on past observations, however, one is entitled to view the CCTA's market-sharing plan as simply an attempt on the part of the cable television industry to widen its base of monopolized services at the expense of the telephone companies without, at the same time, expressing a willingness to take on the same burden borne by the telephone companies in terms of extension of service to unprofitable areas or in submitting to regulation of rates.46 It was observed in chapter IV that the cable industry has used its (almost unregulated) publicly sanctioned monopoly to extract huge surpluses from subscribers but has been reluctant to involve itself in a significant way in unprofitable local programming or extension of service. The very limited form of competition advocated by the CCTA could serve to weaken the financial base of the common carriers by preempting future services (and thereby restricting their capacity to extend and upgrade services in underpopulated areas) while at the same time depriving the public of the advantages of actual competition. In other words, duopoly in which the duopolists do not compete could give worse results than effectively regulated monopoly.

45. "Stored television," or "disa-a-programme," would allow a subscriber to view any programme contained in a central television "library" at a time most convenient to the viewer. The programme would be addressed to the particular viewer.

46. Again, quoting from the CCTA's brief to the Quebec government: "Cable does not have a monopoly on program viewing. If viewers are satisfied with their off-the-air television reception ... then they simply do not subscribe, and choose the free alternative of over-the-air reception. ... Anyone who does not want this entertainment and information diversity need not subscribe to CATV, any more than he must purchase a television set."

At the same time, one may disagree with the CCTA's plan to split the monopolized services and still be in favour of increased competition in intrarural telecommunications, so long as this competition is indeed effective. The creation of "effective" competition may prove to be difficult, however. Economic theory has established that in cases in which duopoly exists and fixed costs form a high percentage of total costs, destructive price cutting is likely to take place until one of the duopolists is forced to leave the industry. Therefore, unlimited competition in all services cannot be allowed to exist between the two systems or else none of the (long-term) benefits of competition will endure. One solution might be to maintain the legal monopoly positions of the telephone companies in telephone service and of the CATV companies in relaying broadcast television signals and to allow open competition between the two elements of the dual network in all other areas. The monopolized areas would, of course, remain subject to public utility regulation.

However, this approach still poses the difficult problem of prohibiting cross-subsidization (by either group) of services in the competitive sector by revenues derived from the monopolized services with the intended effect of eliminating competition in those areas in which such competition is publicly sanctioned. The difficulties in separating out overhead costs and allocating them to specific services in order to ensure that such cross-subsidization does not take place already has been noted above. One likely result of such competition is, then, that rates both for telephone service and for CATV service would be forced upward in order to permit low rates in the competitive areas. A second possibility is that all competition by the cable companies would be destroyed and such companies would be forced to withdraw into the provision of only CATV service. Some method must be found, therefore, to protect the subscribers to the monopolized services so that they are not subsidizing subscribers in the competitive areas. The problem obviously is aggravated if the present regulatory system is continued whereby the telephone systems and CATV systems fall under different regulatory jurisdictions, often at different levels of government. The body charged with regulating the telephone companies, for example, may not be terribly concerned with the effects of rate levels established by the telephone companies upon the competing broadband cable systems when the responsibility for regulating these latter systems falls elsewhere.

It must be concluded, then, that a dual system approach involving both competitive and monopolized sectors may be subject to certain abuses. It is difficult to predict to what extent such possible abuses might be prevented were both elements of the system to be regulated by a single body. At the very least, actual anticompetitive practices under...
such unified regulation would receive a full airing before the regulatory commission by the aggrieved party. Effective regulation would do much to placate the concerns expressed above.

On the other hand, the approach under present consideration offers several potential advantages over full integration of cable systems into the telephone systems as discussed above. In the first place, such a plan is less rigid and more open ended than the others considered. In other words, there is no foreclosure of future options at a stage when none of the potential services even have been offered.

While the TCTS argued that any dual system could involve "wasteful and costly duplication of telecommunication facilities which can carry the same or similar services," in actual fact, for most municipalities in Canada, two systems now exist and are quite profitable. Limiting cable companies to CATV service or allowing the telephone companies to provide services in the areas in which they both competed could be less significant were competition eliminated in these areas, and (2) whether competition in urban areas would undermine the revenues of the telephone companies to such an extent that they would be unable to extend their new services to rural areas through the principle of cross-subsidization.

47 The TCTS argued that any dual system could involve "wasteful and costly duplication of telecommunication facilities which can carry the same or similar services," in actual fact, for most municipalities in Canada, two systems now exist and are quite profitable.


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icy in provinces where the communications carriers are owned by the government and the other in provinces where the governments attempt to control the worst abuses of monopoly by regulation of privately owned corporations. It is suggested here, then, that such competition be introduced in selected markets and be closely monitored by governments in order to identify the magnitudes of the trade-offs. Such experience should allow policy makers to take into account some analysis of the public interest in their decision making rather than having to rely exclusively on representations from the vested interests.

The distinction made regarding competition policy in provinces where the telephone systems are owned by the Crown rests on the belief that regulation is, by and large, ineffective in protecting the consumers. This belief is shared by most students of regulatory commissions regardless of political persuasion. See, for example, George Stigler and Claire Friedland, "What Can Regulators Regulate? The Case of Electricity," Journal of Law and Economics, October 1962, and Gabriel Kolko, Railroads and Regulation 1877-1916 (Princeton: Princeton University Press, 1965). At best, it is felt, regulation has a negligible impact on the conduct and performance of the firm, and at worst it can result in the coercive powers of the state being used to protect the monopoly long after the need for monopoly has passed and also distort efficiency incentives of the regulated firm with the result that the firm undertakes unneeded capital expansion. See Harvey Averch and Leland Johnson, "Behavior of the Firm under Regulatory Constraint," American Economic Review, December 1962.

The author has assessed the performance of publicly and privately owned telephone systems in Canada and concluded the government systems have out-performed the private ones in terms of efficiency, quality of service, and extension of service. See Babe, "An Economic Analysis of Telecommunications in Manitoba." For an evaluative report on regulatory agencies in Canada see Canadian Consumer Council, "Report on the Consumer Interest in Regulatory Boards and Agencies" (Ottawa), mimeographed, 1973. The best work on the theory and practice of regulation is Kahn, Economics of Regulation. 5.

VII Telephone Company Restrictions

This chapter documents the restrictive measures imposed by the telephone companies on the CATV systems which have the effect of foreclosing potential competition between the two systems and of raising the costs faced by CATV systems. To be discussed are arbitrary rate charges, pole attachment rights, restrictions on uses made of cable and control over the type of messages transmitted over the cable, interconnection policies, leaseback and partial system agreements, construction costs, and other restrictive practices. Before proceeding, however, a short discussion is presented on the evolution of the relationship between the telephone companies and cable companies and the power of the telephone companies over CATV systems.

POWERS OF THE TELEPHONE COMPANIES

In 1880, under a Special Act of the Parliament of Canada, the Bell Telephone Company was incorporated; the act has been amended twelve times since that date. Bell's charter gives the company the power to construct and maintain telecommunications lines along or across public highways, the power to purchase telephone lines and the power to invest in companies engaged in telecommunications research and development. . . . The company's charter makes it mandatory for the company to provide telephone service to all applicants on prepayment of lawful rates provided that it is to be located within a territory to which a general service is given,
and provided that it is within two hundred feet of any street along which the company has a telephone plant.

In 1882, Bell's charter was amended to indicate that the company had the power to extend its telephone lines throughout the whole of the Dominion of Canada. Furthermore, the works of the company were declared to be for the general advantage of Canada. In 1906, the company's charter was amended so that the company and its charter were made subject to the provisions of the Railway Act. Accordingly, the Board of Railway Commissioners, (subsequently the Board of Transport Commissioners for Canada and now the Canadian Transport Commission), was granted jurisdiction over Bell.

Under the Railway Act, the Canadian Transport Commission has the power to regulate all telephone tolls and rates where the tolls and rates are to be charged to the public. The government recently introduced Bill C-11 in the House of Commons, however, to amend the Railway Act. The explanatory notes to this Bill indicate, in part that "these amendments would remove the exemption for private wire services and would place telegraph and telephone tolls for all a company's services and facilities within the jurisdiction of the Canadian Transport Commission."

The charter powers of the company permit Bell to engage in the widest possible range of telecommunications services, namely, "the transmission, emission or reception of signs, signals, writing, images or sounds or intelligence of any nature by wire, radio, visual or other electromagnetic systems."

Bell's power to operate a telecommunications business is qualified, however, by further provisions contained in its charter. In particular, Bell must act solely as a common carrier, and shall not control either the contents, nor influence the meaning or purpose, of any messages transmitted over its facilities. Bell is also restricted insofar as it cannot hold, either directly or indirectly, a broadcasting licence or a CATV licence.¹

In effect, Bell Canada (and the other telephone companies) have been given a statutory monopoly by Parliament (and provincial governments) on the theory that the public interest is best served by the general availability of telephone service. The telephone companies have the statutory right to erect telephone poles and lay conduits across and along public highways, and this right confers an added value to the telephone plant well over and above any material value involved in the poles and conduits themselves. In most cases, the only economical method for a CATV operator, for example, to run his cable through a city is to negotiate with the telephone company for access rights to the poles. In this way, he also obtains rights-of-way and easements.

In order to protect the public against the possible abuses of a telephone monopoly, the Parliament of Canada termed Bell Canada a common carrier in telephone services, implying that Bell was required to ac-


cept all subscribers onto its system at just and reasonable rates, and further subjected the company to rate regulation of telephone service. However, the telephone company has not been deemed a common carrier in the supply of pole space,² and for this reason it has been able to exact large concessions from applicants desiring access to the poles.

In short summary, the telephone company has been given a monopolistic right to erect poles across and along public highways since it was felt the public interest lay in the general availability of telephone service. However, the telephone companies have used this monopolistic privilege to exclude services by applicants for pole space and this exclusion may well not be in the public interest.

The position of the cable companies in dealing with Bell has been summed up as follows:

Bell is attempting to control coaxial cable uses and to take over as much of the field as it can, and it is in that area that we have philosophical concern that while they may control telephones, as we are sure they do, and quite properly, that they will end up controlling CATV and, in time, all the

². This is the distinction made by Bell itself. In testimony before the Canadian Transport Commission's hearings on pole attachments, the lawyer for Bell (E.E. Saunders) stated (in quoting the Bell Act): "What Bell Canada carries are signs, signals, writing, images or sounds or intelligence of any nature by wire, radio, visual or other electromagnetic systems. It is not a common carrier of transmission cables. It is entitled to provide transmission cables so that it can carry and there is a great difference. It is like saying that any common carrier is obliged at any time to hand to anyone his equipment so that they can go into competition with him."

³. Bell denies that it has been given a monopolistic right to erect poles, and strictly speaking, this is true.

Mr. Saunders: A CATV Operator has a choice, leaving out Bell Canada poles, or the telephone company's privileges. It can own its own poles or it can go underground and then it has a choice of a partial or a complete system.

Bell Canada has a right to go on highways and the same right is granted by the Railway Act to any other telegraph or telephone company which comes under the Act. And then, as we look around, we realize that this is the same right in various forms as has been granted in various jurisdictions to various types of companies.

So, the type of right that Bell Canada has to use the public highways for its poles is the same type of right that has been granted over the years to various types of utilities, whether they be telegraph, telephone, electric power, gas and it is a right to place the facilities on the public highway.

This is the monopolistic right of Bell Canada that nobody else in the world owns. It is the type of right that is given to utilities for the public interest in order that they may carry on their business. CTC, "Transcript of Hearings," pp. 939, 949, 1992.

While strictly speaking, Saunders is correct, at the same time it has been established that it is very difficult for CATV operators to erect their own poles. Most municipalities refuse to grant this permission to cable operators, with the result that the only poles available are those of Bell Canada.
other many uses that this electronic highway to my house and yours will represent.

Our concern again is one which is reflected from the marketplace and in which any independent CATV operator wishing to install a system must negotiate with Bell for the use of its right-of-way, and there is frankly no other economic alternative route. There are other routes, practical economic routes. The Bell is unquestionably the logical communication right-of-way. The easements they have been given are in the right location, the poles are there, the drop lines, for telephones, and these other services make them by far the most desirable.4

It will be recalled that under the act respecting the Bell Telephone Company of Canada “the Company and its subsidiaries do not, however, directly or indirectly or by any other means, have the power to apply for or to be the holder of a broadcasting licence as defined in the Broadcasting Act or of a licence to operate a commercial Community Antenna Television Service.”5 What the law has prohibited Bell Canada from controlling through a licence, Bell has succeeded in controlling through its monopolistic control of telephone poles. In fact, Bell Canada exercises as much regulatory control over CATV systems as does the CRTC.

The extensive powers held by Bell over the cable television industry probably first came to public attention in early 1969 when it was learned that in practice Bell was granting cable licences in Toronto.6 Until the passage of the Broadcasting Act in March 1968, such governmental regulation of cable television as existed was implemented by the Department of Transport. The DOT laid down certain technical standards and granted licences which were not exclusive. Generally, anyone who applied received a licence to operate a CATV system.7 At a CRTC public hearing held in February 1969, it was disclosed that small cable firms had tried in vain to obtain cable territory in metropolitan Toronto, and that the efforts of these firms in this endeavour were frustrated because of a $5 million deal between Bell Canada and five large cable companies.8

7. CRTC, Cable Television in Canada (Ottawa, 1971), pp. 8-10. The DOT usually restricted to licence cable systems with head-ends more than ten miles from the area to be served and virtually banned the use of microwave in order to help preserve local telephones. Cable operators were not permitted to alter off-air signals.
8. Bell developed a policy, according to Bell representatives, of wiring areas only for applicants who held a DOT licence, held Letters Patent, and possessed financial solvency, and, until 1967, would wire any and all areas for applicants meeting these criteria. After 1967 Bell decided to limit the total territory of any one applicant to 2 million square feet. Negotiations among Bell, Maclean-Hunter, Coastal Colourview, and Rogers Cable resulted in an agreement to split up all unwired areas of Toronto. In regard to the criteria of financial ability of the applicant, Bell required 20 percent down payment in cash at the time of signing the contract of the total construction charges, and ran credit checks against applicants. See CRTC Transcripts, pp. 97-104.
9. Metro Cable TV, York Cablevision, Rogers Cable TV, Coastal Colourview, and Maclean-Hunter Cable TV were the fire cable companies with whom the final deal was signed.
10. Ibid., 20 February 1969.
Bell Canada has two standard contracts, both of which are "lease-backs." The partial system agreement is less restrictive than the complete system agreement; therefore, in what follows, almost exclusive attention will be paid to the former type of contract. The outstanding feature of a leaseback contract is that in order to gain access to telephone company poles and rights-of-way, the cable companies must contract with Bell to construct the cable system, pay for the labour and materials used in the construction, and then lease the system back from the telephone company since ownership of the cables resides with the telephone companies. Under the complete system agreement, all cable and equipment used in the distribution system remains under Bell ownership even after the CATV firms have paid for it.

Under the partial system agreement, some of the equipment used in the distribution system is owned by the cable operator; however, all of the coaxial cable remains the property of Bell (with the exception of house drop cable). Bell refuses to allow cable owned by CATV companies on its poles.

This policy was admitted to by Bell in a CRTC public hearing:

Mr. BAYS (general marketing manager, Bell Canada): Our policy, Mr. Goldberg, is that we do not accept pole attachment privileges at this time.

Mr. Goldberg (counsel for CRTC): Now I would like it if I could get from you, please, gentlemen, a definite answer to the question of leasing of poles. What is your policy about two cable operators who have their own cable or who are in a position to supply their own cable and who do not need your footage but only require your pole use? What is your general policy?

Mr. BAYS: Our policy is that we do not accept pole attachment privileges at this time.

Mr. Goldberg: So that if a company which met the criteria of having a licence and having Letters Patent and being financially substantial, still if it wanted to put its own cable you would refuse to accept such an arrangement?

13. Other features of the "complete system agreement" include the following: (1) the distribution system is to be unidirectional only; (2) channel space is leased from Bell on a per-channel basis. The rates include a monthly charge of $85.00 for the first channel and $42.50 for each successive channel up to 19 channels. A monthly charge of $17.25 per quarter mile of cable when the system carries 8 regular TV and 4 FM stations is also imposed; extra television channels increase that rate by $1.25 each, while FM stations cost an additional $0.25 each; (3) the head-end, antenna, and housings for equipment remain the property of the cable operator; Bell constructs and installs the entire system. Initial subscriber connections are made by Bell, while disconnects and reconnects are to be made by the cable operator; (4) a performance bond, in an amount to be determined by Bell, is required to guarantee payment of charges for the initial construction. See Canadian Telephone and Cable Television Journal, December 1968-January 1969, p. 22.
The one-time installation charges cover cable installed aerially, in ducts, or buried, and such charges "include use of Bell poles, and ducts that exist at the start of construction of any given plant, provided that, based on recognized utility engineering standards, said structures have the capacity to bear coaxial cable." If such capacity does not exist, the customer must reimburse Bell for the extra costs involved, and the customer is billed at "supplementary work prices" (prices based upon "full economic costs incurred by Bell"). At the rates listed above, then, Bell charges between $2,000 and $3,000 a mile for supplying and installing cable, assuming no supplementary work is needed. In addition, the cable companies must face the cost of supplying the electronic equipment (mainly amplifiers), which will raise the per mile cost significantly.

In order to assess the reasonableness of the rates charged, the Bell per mile rate for supplying and installing cable of type AL 3475 (assuming no supplementary work) is compared with the per mile rates charged by Noram, a private CATV engineering and construction firm, for installing the same cable. The prices in each case are for the erection of strand and cable plant and include all associated pole hardware and the installation of amplifier housings (without the amplifiers) and passive devices. The Bell rate of $3,310 per mile compares to $3,362.36 per mile charged by Noram.14 The rates charged are so similar that one might at first believe that Bell charges are quite reasonable. One should not lose sight of the fact, however, that under the Noram system the customer owns the cable while under the Bell system Bell retains ownership and continues to charge cable rental fees. This latter point will be discussed in more detail below.

To further test the reasonableness of telephone company charges, Table VII-1 compares estimated construction charges for a Calgary cable television system. The system in question is 900 miles in length (with 72 miles of underground cable and 110 miles of trunk cable) and passes 105,000 dwelling units.

As would be expected, the lowest total cost can be obtained when Calgary Videon undertakes the construction itself, and the next lowest cost may be obtained by subcontracting out the construction. The lowest of the telephone company bids comes from Bell Canada, their absolute cost bid of costs in 1970, and is 2.7 times greater than if Calgary Videon carried on its own construction; with a 10 percent discount rate, Bell's bid is $994,097 higher of the telephone company bids comes from Bell Canada, their absolute cost may be obtained by subcontracting out the construction. The lowest Calgary Videon undertakes the construction itself. and the next lowest

<table>
<thead>
<tr>
<th>Contractor</th>
<th>Capital Expenditure</th>
<th>Telephone co. expenditure 10-year rent 10-year rent 10% discount rate</th>
<th>Total capital Present value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manitoba Telephone</td>
<td>$6,555,380</td>
<td>$3,079,296</td>
<td>$9,364,676</td>
</tr>
<tr>
<td>Edmonton Telephone</td>
<td>6,568,227</td>
<td>1,334,556</td>
<td>7,902,783</td>
</tr>
<tr>
<td>Calgary Videon</td>
<td>5,828,398</td>
<td>938,500</td>
<td>6,786,808</td>
</tr>
<tr>
<td>Source: IWC industries, Ltd.</td>
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</tbody>
</table>

The evidence supported the contention that the partial systems were more costly but the data are suspect and did not go unchallenged at the hearings: (1) For a cable television system constructed in Sault Ste. Marie, costs under the Bell Partial Agreement were 47.0 cents per foot while construction by the cable operator (including Public Utility Commission pole charges) resulted in costs of 40.2 cents per foot. (2) A study undertaken by a private consultant for several cable firms and the Department of Communications estimated that the average cost per mile for a 26 channel cable system built and owned by a cable company (as estimated from data supplied by 19 cable companies) is $4,937. Compared to Bell Partial System costs of $5,910 per mile. See CTC, "Transcript of Hearings," p. 434F, and 472F.


15. The Canadian Transport Commission also heard evidence on the relative costs of Bell partial agreements as opposed to construction by the cable operators themselves. The evidence supported the contention that the partial systems were more costly but the data are suspect and did not go unchallenged at the hearings: (1) For a cable television system constructed in Sault Ste. Marie, costs under the Bell Partial Agreement were 47.0 cents per foot while construction by the cable operator (including Public Utility Commission pole charges) resulted in costs of 40.2 cents per foot. (2) A study undertaken by a private consultant for several cable firms and the Department of Communications estimated that the average cost per mile for a 26 channel cable system built and owned by a cable company (as estimated from data supplied by 19 cable companies) is $4,937 compared to Bell Partial System costs of $5,910 per mile. See CTC, "Transcript of Hearings," p. 434F, and 472F.


17. Average pole life in the Bell Canada System is 22.6 years. CTC, "Transcript of Hearings," p. 774.
straight-line depreciation of the pole would give an annual depreciation charge of $3.00 to $6.00. Since Bell Canada is not charging the cable companies for the full amortization of the pole, its rates may be said to be "reasonable." For further comparison, Ontario Hydro generally charges $2.00 to $6.00 per year per pole when cable companies rent space from them.

In summary, the first major area of friction between the telephone companies and cable systems revolves around the charges imposed by the former on the latter for system construction. Some evidence has been presented above to indicate that these charges are not always reasonable.

The second broad area of confrontation is more important than the first, however, from a public policy point of view and it involves unreasonable restrictions imposed by the carriers on the cable system as regards the types of services that may be provided.

Article 4 of the contract between Bell and Terra Communications states in part: "The Customer covenants to use the Bell facilities only for the distribution of signals conveying television and/or radio programs. Such signals may be disseminated to the complete network, a limited network or on a point-to-point basis. Nothing in this contract shall be construed as permitting the transmission of data which is not part of or ancillary to a broadcast or cablecast, radio or television program. The signals conveying television and/or radio programs may flow either direction on the Bell facilities provided only that the Customer shall not utilize the two-way capability of the cable for any inquiry response type of communication. Customer shall not use in conjunction with or connect to the Bell facilities any device capable of performing automatic or manual exchange of switching."

While cable systems under this section of the Bell contract are limited entirely to the traditional role of distributing broadcast programmes and while such restrictions severely limit the progress cable systems can make in developing new telecommunications services, the restrictions actually are a good deal less severe than those formerly employed by the company, and than those still employed by some of the other large telephone systems in Canada. Further insight as regards telephone company powers over and attitudes toward cable television and the battle for regulatory control over CATV between the telephone companies and the CRTC can be gained by a close study of the development of CATV in Nova Scotia. In order to investigate the relative powers of the telephone industry, the cable industry, and the federal regulatory body (the CRTC) the development of cable television in Halifax is now studied in some detail.

In 1968 the Maritime Telegraph and Telephone Company (MT&T), which is owned to the extent of 50 percent by Bell Canada, applied to the Canadian Radio-Television Commission for a licence to operate a cable television service in Halifax. The following exchange took place at the CRTC public hearing that was concerned with MT&T's licence application:

Mr. THERRIEN (commissioner): Mr. Unsworth, page four of your brief you mention that most CATV systems depend on telephone company poles and plant and if Maritime's application is approved, that action will result in an effort to deny the licences to other interested parties and the grant of an exclusive right in Nova Scotia. Does that mean if you were granted a licence in a certain part of Nova Scotia, you would refuse access to the poles in the remaining area?

Mr. UNSWORTH (secretary and general counsel, MT&T): Yes.

Mr. THERRIEN: And how does this compare with the definition of common carrier included in the Federal Act?

Mr. UNSWORTH: Well, I don't honestly know, Mr. Commissioner. The definition of common carrier well that is not defined in any regulation which governs Maritime Telegraph and Telephone Company. It may be defined in one of the Federal Acts but if so, I am not aware of it. What we have in mind is building a system so if we do receive a licence to operate in Halifax, we would be back again applying for licences in a number of other towns and villages.19

The CRTC did not approve the licence application, and MT&T was not back (directly). However, on 11 May 1970, MT&T signed a lease agreement with Metrovision, Ltd. regarding the leasing of cable facilities in Halifax and Dartmouth. The major features of the lease agreement between the two companies were:

1. MT&T was to remain full owner of all equipment used in the cable system (including the head-ends, studio, mobile equipment, microwave plant, and the coaxial cable distribution system including subscriber drops and electronics). In other words, none of the assets of the cable system would be owned by the licensee (Metrovision).

2. While the studios would be owned by MT&T (including cameras, projectors, tapes, vehicles, and so forth), they would be subject to the exclusive control, direction, and use of Metrovision. In addition, Metrovision would have exclusive control (subject to CRTC direction) over all programme content.

3. MT&T would retain the right to use itself or lease to others any vacant frequencies in the microwave and coaxial cable system.

4. In compensation for use of the plant and equipment, Metrovision was to pay MT&T the following: (a) all operating expenses, including


In 1968 the Maritime Telegraph and Telephone Company (MT&T),
distribution network so-called and not a CATV system only. The system would make use of the existing central office facilities of Maritime. ... It is respectfully submitted that the proposal by Maritime would result in the provision of CATV service to more areas than would otherwise be economically possible ...; it would avoid excessive duplication of facilities—both microwave and local coaxial systems; it will integrate with existing telecommunication services; it will provide for the establishment and expansion of Educational Television all of which will be in the best interest of the residents of Nova Scotia. [Emphasis added. Cf. statement by Mr. Unsworth, supra, in which he denied MT&T’s status as a common carrier.]

Were the CRTC to have granted a licence to Metrovision, the latter being subject to the terms and conditions as given above in their contract with MT&T, the CRTC would have effectively abdicated all control over cable television in Nova Scotia to Maritime Tel. Under this contract, Maritime would have complete authority in the purchase and selection of equipment and the timing of construction and would have complete control over the quality of signals; control over these matters would be beyond the jurisdiction of the CRTC since MT&T would not be the licence holder.

Presumably, the commission would retain some control over rates, choice of channels, and local programming on the cable system. The cable company itself would be left with no assets under its ownership except the contract. What approval of the Metrovision application would have accomplished in comparison to approval of MT&T’s own application simply would have been to remove MT&T to “arm’s length” from the local cablecasting function. In every other matter, MT&T’s powers over CATV would remain as great as if they were granted the licence themselves. In fact, their powers over CATV under the proposed contract may be said to be even greater, since MT&T itself would not be responsible to the CRTC because it would not be the licence holder. MT&T would have assumed complete regulatory authority over CATV and be able to share in the profits at the same time.

In what clearly is one of the most important decisions made by the CRTC, the Metrovision application was denied. In approving the applications by two other companies to serve the Halifax-Dartmouth area, the commission said: “Approval of these two applications is conditional upon the CATV licensees having effective ownership and control of the local head-end, amplifiers and associated equipment. ... The Commission proposes to discuss ownership and control of the distant head-end with each party.”

As a result of the CRTC decision, MT&T entered into a contract...
agreement with Halifax Cablevision. The major provisions of the agreement are now given:

1. The cable system may be used to distribute television and FM signals only. Industrial, commercial, educational, and other similar television offerings normally distributed on a limited network (that is, to less than 100 percent of the company's subscribers) or point-to-point basis (that is, from one location to one other location) are prohibited.

2. MT&T reserves the right to make use of any unused channels or frequencies provided that the quality, grade, or frequency assignments of the CATV signals are not thereby impaired.

3. MT&T retains ownership of the coaxial cable distribution system; Halifax Cablevision retains ownership of house drops, amplifiers, the studios, and the head-end.

As a final example of the restrictions contained in telephone company contracts with cable companies having the effect of limiting the fields such companies may enter, selected clauses of a Coaxial Cable Distribution Agreement between the Manitoba Telephone System and Metro Video, Limited, dated 31 May 1967 are given below.

The Telephone System shall supply certain equipment to be used in conjunction with the customer's own equipment for the purpose of distributing broadcast television program material or frequency modulation radio program material, broadcast openly for free public reception from a licensed broadcast television or radio station received directly off-the-air or indirectly by microwave relay (where permitted by the Department of Transport and the Board of Broadcast Governors) by the Customer's equipment, or injected into the distribution system by direct connection (where permitted by the Department of Transport and the Board of Broadcast Governors) from standard television or radio broadcast stations, to standard television or radio receiving sets of all the customers owned, or occupied by the Customer by any means that would not allow all of the customers patrons to receive all of the material being transmitted with standard television or radio receivers is not permitted. Additional channels may not be created from channels provided to the Customer for use of the CATV system.

The Customer shall have the right for the purposes set out in this Agreement to make use of the following channels or space in the frequency spectrum contained in the cable facilities furnished by the Telephone System under this contract;

(a) VHF channels contained in the 54-88 megahertz wave band for television channels 2-6 inclusive;
(b) VHF radio channels from 88-108 megahertz for broadcasting FM radio programs;
(c) VHF channels contained in the 174-216 megahertz wave band for television channels 7-13 inclusive.

The Telephone System shall have the right to use the remaining channels or space in the frequency spectrum in the said cable as well as UHF channels 14-33 inclusive over the frequency range 470-890 megahertz, inclusive and for that purpose, enter the said cable, provided however, that the Telephone System will not use or allow any other person to use any of the said channels reserved to itself for the purposes of competing with the entertainment channels to be used by the Customer.

It is mutually agreed between the parties hereto that the use of the channels in the said frequency spectrum in the said cable hereby allocated to the Customer shall be used for entertainment purposes only unless the Telephone System, in writing, grants to the Customer permission to use the said channels for any other purposes and, without restricting the generality of the foregoing, the Customer shall not use its part of the cable facilities for industrial, commercial or educational television or other similar television service offerings which may usually be distributed on a limited network or point to point basis.

By way of contrast, pole attachment rights are granted by Alberta Government Telephones and British Columbia Telephone. While B.C. Tel. is simply following the policy of its parent company in the United States (the U.S. Federal Communications Commission requires attachment rights), the "liberalism" of AGT is somewhat harder to explain.

What are the effects of the restrictions documented above upon the range of services offered by cable television companies? Every contract discussed prohibits CATV companies from engaging in activities unassociated with television and radio signal delivery. The Department of Communications has broadly grouped services that would be offered in a "total telecommunications system": (a) broadcast services, including commercial and instructional television, commercial and instructional radio; (b) real time point-to-point services, including telephone, video, telephone and teletype, certain computer services; (c) store and forward services, including computer services (time sharing and instruction), facsimile (newsprint and magazines, library access), financial transactions (banking and remote purchasing), interrogating (polling and meter reading), and mail delivery.

The telephone partial contracts in every case have forbidden the CATV companies from engaging in either real time point-to-point services or store and forward services. Often, the telephone companies have reserved the right to use unused spectrum on the cable with the possibility that at some future date they themselves might offer some of the services forbidden to cable companies that are not at present being offered by anyone. However, under the partial system agreements, which are the most common type of agreement, the amplifiers used for one-way
CATV are not suitable for these other services. If the telephone companies were prepared to offer any currently unavailable services on the coaxial cable, they would find it necessary not only to install new expensive electronic equipment, but also to compensate the cable operators for the equipment owned by them (such as amplifiers). This would raise serious problems as to who owns the multiservice electronic equipment, since the CRTC insists upon the partial system agreement. Under the current setup, then, it seems that the unused spectrum on coaxial cable, which is capable of providing so many new services, will continue to be wasted. There are two ways of approaching this standoff. One method would be to follow the plan of Maritime Telegraph and Telephone Company whereby the telephone companies are the sole owners of the broadband distribution network and are responsible for ensuring the compatibility of all equipment for present and future services. In such a case, spectrum would be leased to independent CATV companies for the provision of cable television service, or possibly the provision of CATV service would be undertaken by the telephone companies themselves.

As a second possibility, the telephone companies could be removed from cable television entirely by requiring them to provide reasonable pole attachment rights and by forbidding them to own coaxial cable used for CATV purposes. The advantages and disadvantages of each of these approaches were treated in the previous chapter. It is apparent, however, that under the current regulatory framework neither approach is possible and the further development of intraurban telecommunications will be frustrated until such time as the regulation of telephone and cable is coordinated.

Restrictions imposed by the communications common carriers on cable television systems do not lead even to effective use of television and radio signals. Telephone companies other than Bell Canada have forbidden "limited network" and "point-to-point" communications, often specifically confining programmes to the "entertainment" genre or specifically barring any "industrial, commercial and educational" use of cable networks. Restrictions of the sort that prevent the use of cable television for any limited network service have the same effect, since these restrictions disable CATV from offering, for example, closed circuit programming to schools and universities. Even the Bell contract, which may be considered to be the least restrictive of the partial system agreements, prevents full use of cable television for educational purposes since "the Customer shall not utilize the two-way capability of the cable for any type of communication." The ability of cable to allow students to reply to questions raised in televised lectures is thus voided.

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21. It is interesting to note that at a time when the telephone companies are preventing such closed circuit operations, regulatory authorities in other jurisdictions are requiring this capability.

"For the purpose of permitting the simultaneous transmission into any one or more subdivisions of isolated, discreet signals ... the Company shall within four (4) years from the effective date of this contract have arranged the System so that it is capable of such transmission to no less than ten (10) subdivisions, each containing approximately the same number of dwelling units. Furthermore, the Company shall immediately undertake the development of a plan to divide the District into the greatest number of subdivisions as possible, which subdivisions may be variously combined so as to constitute neighborhood communities, school districts, Congressional districts, State Senate and Assembly districts, and the like, for the simultaneous transmission into any one or more of such subdivisions of such isolated, discreet signals. . . . In the intention of the parties under this subdivision that the System be capable of simultaneous delivery of different programming to each subdivision at the same dial location." From the Municipal Frame
VIII Some Public Policy Issues

With some observers there has developed an increasing dissatisfaction with the age-old practice of granting a monopolistic privilege to a private organization, which, in return, acts as the chosen instrument of the state in its specific field of endeavour. As Dallas Smythe has said:

"Increasingly the technology has generated competitive pressures which have substituted the definition of markets (be they monopolistic as in the case of the switched network or competitive as in the case of the leased lines ...) for reliance on the monopolistic industry-wide corporation with its nationwide averaging of costs and prices for all services. The AT&T and to lesser effect the smaller monopolistic common carriers have given ground slowly and reluctantly to the competitive pressures, with consequent opportunities unrealized which would otherwise have become a reality.

The satellite-computer revolution in technology made totally obsolete the previous notion that a one-to-one relation existed between the technology of telephone (or telegraph) and the monopoly corporation agent of the state in terms of market structure, or patents, or performance in the public interest. Industrial capability in most branches of telecommunications technology now exists in a wide range of major corporations, most of them outside the common carrier category in most branches of telecommunications technology. ... [U.S.] federal R. and D. funds, the space program ... and the computer have shattered the monopolistic corporation as the sufficient agent of national communications policy. ... As Harry Trebing remarks, "Public policy could not re-establish the era of the monopoly firm even if it wished to do so."2"

What has been the root cause behind such dissatisfaction with the single firm as the provider of all services of an industry? The dissatisfaction seems to stem primarily from rapid technological change and the demand for new services. The invention of the telephone necessitated the introduction of new plant and equipment quite unrelated to any existing plant and equipment in regard to both the technology used and the services provided. And so it seemed desirable to entrust the development of this new service and technology to a franchised monopoly so as to reduce risk and uncertainty and allow for planning on a large scale. The monopoly corporation assumed the responsibility for developing the terminal equipment to be connected with the system, and so long as the only attachment remained the telephone, there did not appear to be an overwhelming social cost in this monopolistic delegation of duties. The telephone companies had developed their system for telephone use and were fully competent in refining and improving the system for this use.

Upon realization that the telephone distribution plant could be used for services other than simple telephone use, however, the efficacy of maintaining the monopoly privilege over the switched communications system began to be challenged. An analogous situation would be one in which the hydro companies were given the unique responsibility of developing and marketing all electronic apparatus for all users that was to be plugged into the nationwide system of electric power wires. The ability of such a single entity to meet the special needs and requirements of millions of individual customers would be severely limited; no single corporation could begin to meet a responsibility of this magnitude. Similarly, the exploding communications technological revolution means that the telephone common carriers may be inadequate to meet the task of providing all communications services. However, any understanding of...


3. Economic theory and empirical investigation have pointed up a second concern as regards the regulation of the chosen instrument, namely, that the regulated firm is under a pervasive incentive to be inefficient with regard to (a) the types of activities in which it engages, (b) the choice of factor inputs used to produce a chosen level of output, and (c) the level of output produced. Rate of return regulation provides the firm with an
this situation has developed only recently and only hesitantly has been reflected in public policy measures. As described in previous chapters, incentive to pad its rate base by (a) entering fields of activity that normally would be noncompensatory, with the added effect of undercutting competitors who are able to cross-subsidize their activities from a publicly sanctioned monopoly markel, (b) employ cross-subsidization as opposed to labor-saving technology even though the latter could be more efficient given relative factor prices, and (c) extend service to all areas even though the benefits forthcoming do not justify the costs entailed. The pressures for inefficient- ness all stem from the fact that the regulated company keeps its return on the amount of capital it has invested and so the greater its capital investment, the greater its profits. In short, the more inefficient the firm is, the greater its profitability. See, inter alia, Averch and Johnson, "Behavior of the Firm under Regulatory Constraint"; Trebing, ed., Performance Under Regulation; Fred Westfield, "Regulation and Conspiracy," in American Economic Review, Vol. 63, 3, June (1973); and F. H. Cheadle, "An Examination of Regulated Industries" (Washington, D.C.: Brookings, 1971); W. G. Shepherd, "Utility Growth and Profits Under Regulation," in Utility Regulation: Nou­ tary and Policy, eds. W. G. Shepherd and T. G. Gies (N.Y.: Randen House, 1966); Kahn, Economics of Regulation: Robert A. Meyer, "Publicly Owned Versus Privately Owned Utilities—A Policy Choice"; Katz, Economics and Management Science, 17, 18 November 1972 (Washington, D.C.: Office of Telecom­ munications Policy, 1972); R. M. Spane, "Raux of Recent Regulatory Redesign in the Production: An Empirical Test of the Averch Johnson Thesis," Bell Journal of Economics and Management Science, Spring 1974; and L. Courville, "Regulation and Efficiency in the Electric Utility Industry," ibid.

A third reason for dissatisfaction with regulation as an instrument of consumer protection rests with the belief that the regulatory commission inevitably becomes "cap­ tured" by the regulated firm. In effect, the regulatory commissions is used by the firm to (a) maintain its monopoly against incursions by potential competitors, (b) ensure that the firm's monopoly has vanished, and (c) act as a shield between the public and the firm, as the public believes, it is being protected from monopolistic exploitation even though the regulatory boards and the firms are colluding to extend their monopoly. It may be well to again bring forth a letter written by the attorney general of the United States in 1992 to the president of the Chicago-Burlington and Quincy Railroad. Mr. Olney, the attorney general, who was responsible for the creation of the Interstate Commerce Commission, the first of the U.S. regulatory boards, was faced with regulating the "railroads in "the public interest, convenience and necessity," is here re­ sponding to criticism by the railways over creation of such a body. "The Commission ... can be made of great use to the railroads. It satisfies the popular clamour for a government supervision of the railways, at the same time that the supervision is almost entirely nominal. Further, the larger the commission gets the more it will be a found to take the business and railroad view of things. It thus becomes a sort of barrier between the railroad corporations and the public who is affected by any requirements imposed by these bodies. The facilities of establishing legislation hostile to the railroad interests .... The part of wisdom is not to destroy the Commission, but to utilize it." Letter of Richard Olney, attorney general of the United States to Charles E. Perkins, president of the Chicago-Burlington and Quincy Railroad, 28 December 1892, quoted in Nicholas Johnson, Testimony Before the Senate Com­ mittee On Mass Media, 17 June 1979 (Washington, D.C.: Government Printing Office, 1979)."
trition. But the common carriers are standing in the way of this natural deconcentration through powers granted them in the past when the monopoly-agent-of-the-state ideology was more useful.

Bell intends to be in the forefront of this development and to stand athwart the input and output of all transmitted data. This raises many questions, monopoly, privacy, even national security.

A further practice of Bell which could spread into the entire telecommunications field if Bell’s powers are extended has to do with Bell’s practice of imposing “Bell standards” and excluding “foreign” equipment from physical contact with its own system. Bell is the final arbiter in deciding what equipment will be used, how it will be installed and by whom. The impact of this policy already falls on a wide range of service companies and manufacturers dealing with paging systems, sound systems, mobile telephone, telegraph, teletype and, in short anyone with a direct involvement in service or equipment with Bell’s communication network.

It is submitted that the foregoing indicates that Bell’s powers should be carefully limited.

It is possible, then, to summarize the discussion to this point by stating that it may no longer be necessary to employ the monopoly corporation as the chosen instrument of communications development, and, in fact, in order to attain more rapid developments in this field, the powers of the monopoly should perhaps be severely restricted. As has been seen previously, cable television offers only one method of limiting the monopolistic powers of the telephone companies, as reflected in their foreign attachment and interconnection policies, by providing an alternative “electronic highway” onto which individuals may attach their terminal equipment. Such competition, in those fields for which the telephone system and cable system are good substitutes, would limit the arbitrary power of Bell of refusing attachments onto the communications systems, in addition to such limits on this power as may be forthcoming from the Canadian Transport Commission.

It is clear that the potential of CATV is great. How much it would develop with positive governmental promotion is impossible to predict. At the same time, it is evident that in the absence of governmental intervention, one group of private interests effectively has blocked CATV development through the partial system agreement. Therefore, the evolution of CATV is, in the first instance, dependent upon government prohibition of the type of restrictions contained in these contracts. It may be well to summarize briefly public policy on these matters in the United States. Under a 1956 consent decree, “the defendant AT&T is enjoined and restrained from engaging, either directly or in-

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directly through its subsidiaries other than Western [Electric] and Western’s subsidiaries, in any business other than the furnishing of common carrier communications services . . . [and] Western is enjoined and restrained from engaging either directly or indirectly, in any business not of a character or type engaged in by Western or its subsidiaries for Companies of the Bell System [i.e., common carrier activities].” Since CATV has not been declared a common carrier, AT&T is prohibited from owning and/or operating CATV systems.

In spite of the consent decree, the Bell System was able to control CATV companies through pole attachments in ways similar to the telephone company practices in Canada. In order to remove this power over cable companies, telephone companies now are required to establish at the time they undertake construction of independent CATV systems “that the proposed CATV customer now has available the option of pole attachment or conduit space arrangements within the limitations of technical feasibility, at reasonable charges and without undue restrictions as to use, and that such customer still desires channel service from the applicant” [the telephone company].

What these two measures have done is to remove much of the control over CATV formerly exercised by the common carriers. However, to be effective, both measures must apply. The difference in the policies in the United States and in Canada in this matter arises from the fact that while telephone companies are prohibited from owning and operating CATV systems in Canada, there is at present no concomitant control over pole attachments. The CRTC is a regulatory body charged with sum-

6. Ibid.
serving the broadcasting industry, and its regulation of CATV only is
in reference to cable's role in broadcasting. Since the commission has
stressed the local programming function of cable operators, it felt it de-
sirable to refuse cable licences, in effect, broadcasting licences, to tele-
phone companies. However, pole attachment agreements apparently are
not seen by the commission as being of sufficient importance in influen-
cing the ability of cable operators to originate programming as to neces-
sitate its involvement in the contractual relationships between the cable
and telephone companies.10 While such contractual relationships are of
great importance when the focus shifts to public policy regarding the
wired city, telecommunication services over and above broadcasting are at
present beyond the jurisdiction of the CRTC.

Similarly, the Canadian Transport Commission is charged with regu-
lating revenues and rates of Bell Canada in the traditional public utility
regulatory sense only. So long as CATV is considered a broadcasting
service, as opposed to a telecommunications system, Bell policies toward
CATV will receive only limited attention and, furthermore, the CTC
appears to possess only limited jurisdiction in this area. Nine Ontario
and Quebec cable television companies and the Canadian Cable Televi-
sion Association, for example, filed an application with the CTC under
section 5 of the Bell Canada Act (see footnote 4 of this chapter) and
Section 321 of the Railway Act, "asking the Commission to disallow
Bell Canada's... present requirement which prevents the attachment to
its facilities of transmission cables wholly owned by a cablevision under-
taking, and direct that Bell enter into whatever pole attachment agree-
ments the Applicants and that the Commission further prescribe reasonable terms and conditions
for a pole attachment agreement."

Hearings were held in Ottawa 19 to

The CTC ruled that section 5 of the Bell Canada Act was not appli-
cable to the matter of pole rights. Section 5 gives the CTC authority to
rule on the reasonableness of requirements prescribed by Bell for the at-
tachment of "any equipment, apparatus, line, circuit or device not
provided by the Company" to the Bell system that is used in the "emis-
sion or reception of signs, signals, writing images or sounds or intelli-
gence of any nature." But, the CTC ruled, the commission has no
power under that section of the act to rule on the reasonableness of re-
strictions in cases where (a) the attachments are not to the telecommu-
nications distribution system as such (that is, only to poles), and (b)
where the Bell Company itself supplies the equipment to be attached
(that is, the cable).

Even so, the CTC expressed some sympathy for the cable operators,
while at the same time denying its position as the planner for the de-
velopment of the telecommunications industry. These points are worth
quoting in full from the decision:

Taken in that broad context which is governed by the public interest, a
more liberal attitude on the part of Bell could have beneficial effects on
the efficient development of communications services for the Canadian
public. . . . It is not for the Commission to determine in what direction and to
that degree cablevision should develop; it is not for the Commission to
express views as to the division of the telecommunications field between tele-
phone companies and cablevision companies. We are not suggesting that
Bell should enter into whatever pole attachment agreement a cablevision op-
erate would choose to present Bell with, but in light of the jurisdiction of
the CRTC over the signals to be transmitted by its cablevision (CATV) li-
censees and in view of the fact that Bell is prohibited as a licensee, we fail to
see how and why Bell would continue to refuse as a matter of principle
and in practice to enter into some sort of pole attachment agreement with
CATV licensed operators. . . . However, public interest by itself is not suf-
cient to give the Commission the necessary jurisdiction to so order Bell in
accordance with the line of argument chosen by the Applicants.

While denying power under section 5 of the Bell Canada Act to rule
on the matter, and at the same time disclaiming any telecommunications

10. It is quite uncertain exactly how far the CRTC could go in influencing these con-
tractual arrangements, even if it felt such steps to be desirable, since the CRTC has no
control over the telephone companies. As this manuscript was being completed, however,
insulation was before Parliament to merge the Telecommunications Committee of the
CTC with the CRTC. Bill C-5, First Session, Thirty-first Parliament, 23 Elizabeth II, 1974,
First reading, 5 October 1974.

11. CTC, Telecommunication Committee, "In the Matter of an Application by Ottawa
cablevision Limited, Terra Communications Limited, Cable TV Limited, Pineapple Ca-
blic Limited (formerly Ottawa Cable TV Ltd.), Grand River Cable TV Limited, Tele-Cable de Quebec Inc., National Cablevision Limited, Transmission (Magog) Inc.; Barrie Cable TV Limited, Canadian Cable Television Association, directed against Bell
Canada and in the Matter of the National Transportation Act, of Section 5 of Bell
Canada's Special Act and of Section 321 of the Railway Act," File No. 49016, "Deci-
sion," p. 2.
planning role for itself, the CTC stated it could probably rule on the question on a case by case, company by company basis through section 15 of the Railway Act. Even were an application filed under this section, however, it is uncertain whether it would be desirable for the CTC to rule on the matter, given that “it is not for the Commission to determine in what degree cablevision should develop.”

The one federal governmental body that is concerned with the total telecommunications environment, including broadcasting as a subsystem of that total environment, is the Department of Communications (Communications Canada). The powers of the DOC are given by the Government Organization Act, 1969; the duties, powers and functions of the Minister of Communications extend to and include all matters over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, branch or agency of the Government of Canada, relating to (a) telecommunications, and (b) the development and utilization generally of communication undertakings, facilities, systems and services for Canada.

Under the act, the DOC may “coordinate, promote and recommend national policies and programs with respect to communication services for Canada,” and “plan and coordinate telecommunication services for departments, branches and agencies of the Government of Canada,” but since jurisdiction over cable and telephone have, in large measure, been given to other governmental agencies, the DOC is more of an advisory body than a planner with real authority.

Similarly, the DOC has no control, except insofar as authority has been delegated to it under the Radio Act, over the provincially chartered carriers. The DOC is even further removed from influencing decisions of the provincial regulatory boards than it is from coordinating policies between the CRTC and the CTC. While a more fragmented communications industry structure may be desirable in order to allow for the maximum benefits that can be derived from competition, at the governmental regulatory level such fragmentation of supervisory duties has had the effect of maintaining centralization in the private sphere.

If the private monopoly corporation is no longer a necessary or even desirable instrument for implementing the total telecommunications policy, while at the same time technology is imposing a unity on all communications processes (such as television and book distribution), it then follows that it is no longer feasible to regulate the monopoly corporation in the traditional ways, while disregarding firms located on the periphery of its service and technology, and disregarding its reactions to these firms. Paradoxically, while it may be desirable to limit the areas of monopoly to very narrow, specific fields, it becomes more necessary at the same time to enlarge the governmental supervisory framework to cover all activities that are closely related to the activities of the monopoly corporation. This is necessary to guard against abuses of the corporation’s monopoly position and to coordinate activities in the associated competitive areas to make certain that competition takes a socially desirable direction and avoids uneconomic and wasteful duplication of services and facilities.

At first glance, then, there appears to be a paradox (and tension) in that technology is imposing unity on all communications processes while the feeling exists that the communications monopoly is no longer needed to supervise the development and implementation of that technology. A second paradox exists in that while the monopoly market segment should be confined to definite areas, governmental supervision should be enlarged to encompass all communications fields.

There is perhaps a further paradox to be resolved in order to break the impasse in communications policy as described thus far, and this involves a decentralization of regulation in a context of wider regulation:

In the legislative processes leading to the establishment of the CRTC once again the net of control had to be thrown wider in order to circumscribe the growing circle of ancillary considerations which had to be subsumed in order to preserve the integrity of a closed system—control of foreign ownership and development of Canadian content were broadened in broadcasting—provision was made for administrative machinery to permit the provinces to develop educational television—and it was proposed that CATV systems be brought into the national broadcasting system for the first time.

The history of federal communication regulation is one of recurrent crises as the bureaucracy scrambles to overtake technology. With each forward...
step of technology the field of social interaction widens dramatically. Up to the present time accommodations appropriate to the situation have been possible while still preserving the centralised federal context of regulatory control. However, the pace of innovation has quickened. The lead-time from laboratory to everyday use has shortened. Crises now press so closely, the necessity for adjustment is continuous. The move to integrate cable in the Canadian broadcasting system is not just another step. It is a quantum leap. In all its ramifications—two-way capability, permitting audience feedback—video cassette libraries—satellite links bringing programming from every country in the world instantly—computer technology—20+ channel capability—cable is moving our society irresistibly to an entirely new level of communications capacity. Television has had an immensely greater social impact than radio. Yet even at this early stage mature cable technology lying in the years to come bodes to make that impact seem like a mere whisper before the explosion.

Therefore, it is the main thesis of this brief that the past administrative practices and constitutional stances fostering centralised federal control are within the present technological context dysfunctional. The new technology interacts with the total society. Adaptations to integrate in order to realise the maximum benefits must be made at all levels. In terms of the realities those technical functions now comprising the Canadian broadcasting system constitute an open system. Too many external influences impinge increasingly upon it. It is a system moving increasingly to a more open state. To meet the challenge of these realities the regulatory and supervisory functions must be structured to maximize the system input of all levels of government. Only by the closest cooperation and coordination be-

In summary, while the federal government probably should widen its perspectives and integrate its fragmented bodies controlling communications, in order to remove the blockage in the development of telecommunications as exemplified by the cable-telephone impasse, there perhaps ought also to be a decentralization of decision-making functions. Cable television can have a tremendous impact on the national systems of telecommunications and broadcasting, but its effects may be even more dramatic at the individual and community level through its promise of a new democratization of information and entertainment. The interest of the local and provincial governments in policy decisions is obvious. Such decisions cannot be left wholly to the provincial or municipal authorities, however, since there is also a national interest in communications policy. But probably the worst possible regulatory situation is the one that currently exists in all provinces but British Columbia, Ontario, and Quebec, wherein the provincial authorities have exclusive control over telephone service and the federal authorities control CATV. In such a case there is little hope for coordinated planning. Further discussion of an "ideal" distribution of powers between the federal and provincial governments must be postponed until cable's impact on broadcasters has been explored. Part V again takes up the jurisdictional question and the federal proposal for integration of regulation contained in the recent "green paper." From the discussion of CATV's role in the complete telecommunications system, we now turn to its more specialized functions in the broadcasting system. These functions are the exclusive concern of Part IV.

Part IV

CABLE TELEVISION AND BROADCASTING
Communications policy in Canada tends to be synonymous with broadcasting policy. Purely economic policy questions, for example, the structuring of the telecommunications industry in order to achieve economic efficiency, have received very little attention from policy makers when compared to the "social" issues and goals of broadcasting. In fact, the recent green paper issued by the federal minister of communications undertook by the author on behalf of the Department of Communications, submitted as "An Economic Analysis of the Impact of Cable Television on Television Broadcasting Stations." Part IV is essentially a much enlarged version of that study.

1. I define "telecommunications" industry as largely common carrier activity based on the electronic delivery of point to point messages over a distance. Broadcasting, on the other hand, is in the first instance concerned with message creation and only secondarily with message delivery; in addition, the message is received by many and so it is not point to point communications.

In the telecommunications industry policy is directed toward "economic" questions—efficiency, rate of return, cross subsidization, competition, technological advance—while for broadcasting such questions are of the second order only. Economic questions or standards of performance in the context of broadcasting appear to be considered by policy makers only in the context of their implications as regards the attainment of "first order" goals, that is, social goals—the contribution of broadcasting to national unity and cultural development. The separation of economic questions and issues from social questions in the mind of the CRTC probably explains why the commission's economic policy unit consists of three economists (August 1974), none with more than a master's degree. It also explains the commission's naivete on certain economic policy issues (to be discussed below) and its refusal to delve into economic issues, such as profit regulation of CATV. It should be noted, however, that the belief that economics is of little consequence in framing broadcasting policy did not originate with the commission. This belief can be best summed up by the famous quotation from the Fowler Commission: "The only thing that really matters in broadcasting is program content; all the rest is housekeeping." Committee on Broadcasting, 1965 Report, p. 5.
cations placed the goals for the telecommunications industry within the framework of goals previously enumerated for broadcasting. In the document, the minister asks:

1. How can Canadians be assured of a reasonable variety of choice in the communications services available to them, and what must be done to ensure that at least basic communications services are available to all Canadians, wherever they may live, at just and reasonable rates?

2. How can Canadian telecommunications systems be developed and used, to the greatest extent possible, to foster Canadian social and cultural values, and to provide a sure means of disseminating a Canadian perception of Canada and of the world to all Canadians?

3. How can the east/west links which are essential to the social, cultural, and economic development of the country be maintained and developed in relation to the powerful pull of north/south ties?

4. What can be done to ensure that Canadian communications systems are and remain effectively in Canadian ownership or under Canadian control?

5. What are the best means of harmonizing federal and provincial objectives and activities in the field of telecommunications for the greatest benefit of all Canadians?

The questions asked in the position paper are of obvious relevance to broadcasting policy, but some of these questions would appear to be of limited relevance as regards telecommunications. Perhaps the major policy proposal emerging from the position paper is the transfer of regulatory powers over Bell Canada, CN/CP Telecommunications, and B.C. Tel. from the Telecommunications Committee of the Canadian Transport Commission to the Canadian Radio-Television Commission. It would appear that federal regulation of telecommunications will be developed in the context of social goals normally associated with broadcasting.

Of the historic central importance of broadcasting in the federal government's policy of promoting national unity and Canadian culture, there can be little doubt. The Aird Commission, the first Royal Commission on Radio Broadcasting in Canada, published its report in 1929: "Canadian radio listeners want Canadian broadcasting... . At the present the majority of programs heard are from sources outside Canada. It has been emphasized to us that the continued reception of these has a tendency to mould the minds of the young people in the home to ideals and opinions that are not Canadian. In a country of the vast geographical dimensions of Canada, broadcasting will undoubtedly become a great force in fostering a national spirit and interpreting national citizenship."

These attitudes regarding the role to be played by broadcasting have continued and are reflected in the 1968 Broadcasting Act: 2(b) "The Canadian broadcasting system should be effectively owned and controlled by Canadians so as to safeguard, enrich and strengthen the cultural, political, social and economic fabric of Canada."

Cable television policy in Canada has, to date, been implemented solely with regard to CATV's impact on the broadcasting system and in an attempt to prevent cable television from weakening the ability of the broadcasting system to carry out the goals set for it. Cable television as a telecommunications system has received only passing attention from the federal government, and no regulation or encouragement has been forthcoming as regards cable television's possible role in this sphere of the communications industry.

Cable television can have a financial impact on the television broadcasting industry in several ways:

1. By delivering many more television signals into an area than are normally available, cable television fragments the audiences of the local broadcasting stations. By reducing the total audience size, the television station becomes a less attractive advertising vehicle, and its revenues may be expected to suffer. The fact that distant cable systems may carry local audiences are not equal in value to broadcasters, as advertisers are less able to pinpoint their desired audiences when television signals are carried over larger and larger geographic areas. For example, a local car dealer might consider the audience watching his advertisement via cable...
in a centre a hundred miles or more from his business to be next to worthless. Even if one assumes that cable only results in a redistribution of audience composition, so that it does not affect each station's total audience size, it still could reduce each station's advertising revenues.

Rolla Park has shown that in the United States the shifting of audiences among stations because of cable can create a related difficulty. Cable has a different impact on stations of different sizes due to the fact that each additional viewer is worth successively less to a station (that is, the marginal value of viewers declines). Stations in large urban centres, which may be expected to gain net audience, will not gain as much in advertising revenues as stations in small centres will lose due to the decline in their net audience. Therefore, cable television may be expected to cause an overall decline in television advertising expenditures.1

2. The second concern about the effects of cable television on broadcasters involves the openness of the economy. In a closed system, as one may assume the United States to be for these purposes, cable television will have either a zero impact on total viewer-hours devoted to the broadcasting system or increase this time somewhat (because of greater diversity, or channel clarity). In a closed system, viewer-time lost by one station will be made up by gains to other stations whose reception is attributable to cable. Canada, however, does not have a closed system. In fact, the raison d'être of cable in Canada has been stated to be its ability to bring signals of American stations into areas beyond their normal coverage.2 The results of cable's ability to lessen total viewing time to Canadian stations are two-fold. First, Canadian television becomes a less attractive advertising medium because of the decreased audience. Stations will be forced to reduce their rate cards in order to maintain a competitive cost-per-thousand for advertisers using television as opposed to other media. Therefore, total revenue may decline. Second, some advertisers, especially firms with branch plants in Canada, may find it propitious to abandon the Canadian broadcasting system altogether and attempt to reach the Canadian market through advertisements placed on American television stations. That fund available for all Canadian advertising media could decline by being syphoned across the border.

3. By facing increased competition from American stations, private broadcasters may be even further induced than at present to compete for audiences by using mass appeal, light entertainment programmes of the American genre. At this time the schedules of private stations in Canada still could reduce each station's advertising revenues.

Potential Impact of Cable Growth on Television Broadcasting

The increased competition from American stations may force private broadcasters to further lower standards on the 60 percent produced in Canada in an effort to compete for the mass audience. This effect has been reflected in two recent trends in Canadian broadcasting: (1) co-production with American producers of high cost, light entertainment shows, such as "Rollin' on the River," in order to (a) meet the Canadian content requirements and (b) export programmes into the lucrative U.S. market; and (2) production of low cost "Canadian" shows that formerly appeared on U.S. television, such as "Beat the Clock," and low cost mass entertainment shows, such as "The Amazing Kreskin" and "Headline Hunters," that are profitable in the Canadian market alone but cannot pick up additional revenues from export to the U.S. In any case, the result is continentalization of broadcasting, and such continentalization does little in the way of implementing the national policy for broadcasting as set out in the Broadcasting Act.

These concerns over cable television's impact on broadcasters can be placed in a broader, more "economic" framework. The fact that cable television companies make use of services that they receive freely (off-air television signals) may itself justify regulation. Since television programmes are not paid for by cable systems, such systems are under no economic constraint in the use they make of these public goods. Cable penetration rates depend primarily upon the number and types of channels carried by the CATV system as compared with the number and types of channels available off-the-air. Without some governmental regulation, by government itself rationing channels or forcing CATV firms to compensate broadcasters for damages inflicted, it is to be expected that cable operators will make a greater than socially efficient use of channels. Otherwise, cable companies would not be forced to take into account an economic cost—the harm inflicted on broadcasters upon whom the cable companies depend.

In the following chapters and appendixes, growth rates of the cable and broadcasting industries are studied in order to infer whether or not cable television to date had a financial impact on broadcasters; an econometric model is developed that measures the viewing impact of cable television; a discussion, based in part on an econometric model, of the...
economics of advertiser financed television is developed in order to explain the anomaly of steadily increasing revenues to broadcasting in face of declining audience shares due to the fragmentation of audiences caused by CATV; and, finally, an assessment of CRTC cable policy is given in light of previous findings.

X Past Impact of Cable Television on Broadcasting Revenues

The Canadian television broadcasting industry is composed of public and private elements. The Canadian Broadcasting Corporation (CBC) is a crown corporation that operates and provides programming for two television networks, one in each official language. The CBC itself owns and operates twenty television stations, located mainly in the major urban centres. The CBC also provides national programme material to thirty-seven private affiliates, which are located mainly in smaller communities. In 1973 the CBC received $227.0 million in parliamentary grants and $55.0 million from advertising and other sources. From these funds, the CBC must pay not only for programming and programme distribution, but also compensate its privately owned affiliates for air time used.

The private sector of Canadian broadcasting is composed of two English networks (the Canadian Television Network [CTV] and the Global Television Network) and a private French language network, Television Associates (TVA). The CTV network in 1973 had sixteen

1. The Canadian Broadcasting Corporation (CBC) owned and operated stations broadcasting in the English language are located in St. John's, Cornerbrook, Charlottetown, Sydney, Halifax, Montreal, Toronto, Ottawa, Saskatchewan, Winnipeg, Regina, Edmonton, and Vancouver. CBC French language owned and operated stations are located in Moncton, Quebec City, Montreal, Toronto, Ottawa, Winnipeg, and Edmonton. Television Bureau of Canada (hereafter cited as TVB), Television Bureau, 1972-1973.
2. Ibid.
3. CBC, Annual Report, 1972-1973. These figures are for television and radio combined.
affiliates, and the eight largest affiliates in turn owned the network. Through this peculiar ownership arrangement, the richer stations are able to subsidize the smaller by making programming available at little cost. The Global network at present has no affiliates but is composed of six regional transmitters located in southern Ontario. TVA had three affiliates in 1973. In addition, there are four independent, or nonaffiliated, television stations in Canada (including an educational station programmed by the Ontario Educational Communications Authority).

The private sector of Canadian broadcasting is dependent exclusively upon advertising revenues (except for payments by the CBC to its private affiliates for air time and payments made by advertising agencies for commercial productions).

The fact that $155.6 million in advertising expenditures accrued to the television broadcasting industry in 1972 from the sale of air time points out the importance of advertising in financing the industry. There are many factors that are instrumental in determining the level of television advertising expenditures at a point in time and the rate of growth in these expenditures through time. In addition to the number of subscribers to cable television in Canada and the number and type of stations carried by cable systems, a listing of such "exogenous" factors would include: The state of the economy and the condition of business expectations (which may, perhaps, be represented by the level and rate of growth in GNP); the perceived effectiveness of television advertising per se and its relative effectiveness in inducing sales vis-à-vis other media; the number of Canadian television stations and their population coverages; the rates charged for advertising time; rates charged by commercial affiliates for air time and payments made by advertising agencies for commercial productions.

Table X-I compares the rate of growth of subscribers to cable television and the rate of growth of television advertising revenues. In spite of the fact that the number of subscribers to cable television has increased from 215,000 in 1964 to 2,130,000 in 1973, a growth of 890 percent, television advertising revenues have increased over the same period from $80.7 million (net) to $179.0 million (net), or by 122 percent.

4. CTV affiliates are located in St. John's, Sydney, Halifax, Moncton, Montreal, Toronto, Sudbury, Ottawa, North Bay, Kitchener, Winnipeg, Saskatoon, Regina, Edmonton, Calgary, and Vancouver. TVB, Television Basics, 1972-1973.

During the period 1960–1966 television advertising experienced an average annual rate of growth of 12.4 percent, while in the seven-year period 1967–1973 (the period during which the presence of cable television became recognized as a possible threat to the broadcasting system), television advertising grew by an average annual rate of 8.7 percent. Throughout the whole period under consideration, television advertising has grown at an average of 10.4 percent per year in the face of a growing cable television presence. While it is true that the rate of growth in the second half of the period has declined, it may be unfair to blame CATV for the full amount of the decline. This latter point is supported by an inspection of Table X-2.

Table X-2 shows a steady increase in the proportion of the total Canadian advertising expenditures going to television. It is also apparent from Table X-2 that total advertising expenditures in Canada have been depressing over time, and since television’s share of total advertising has been stabilized in recent years, one finds that television advertising in the first half of the period was increasing relative to GNP and has been decreasing in the second half.

The above analysis serves to show that CATV has not yet had such a deleterious effect on television as an advertising vehicle that other advertising media are gaining at television’s expense. One factor separate from CATV that has led to the decline of television advertising relative to GNP is the fact that television audience growth has reached the saturation point. The annual growth in the number of households with television was 2.8 percent during 1966–1969 compared with 4.6 percent during 1960–1966. Second, the costs of advertising on television have been rising very rapidly and may be causing television to become less competitive with other media.

Table X-3 compares the trend in cost per thousand for seven advertising media over the period 1971–1974. The figures for 1974 are projections. It is apparent from the table that from 1971–1973, cost per thousand advertising rates for television have risen to a greater extent than advertising rates for the other six media (15 percent for television versus 14 percent for radio, 8 percent for daily newspapers, 5 percent for consumer magazines, 7 percent for rotogravure, 6 percent for out-of-home advertising, and 12 percent for interior transit). In view of the fact that television advertising’s share of total advertising has risen from 14.8 percent to 15.1 percent over the same period, one must conclude that the demand for television advertising is inelastic.

In summary, aggregated data on advertising expenditure and cost trends by media, and comparison of growth rates of television advertising only 1.19 percent. Through the first part of the period (1960–1967) television became relatively more important vis-à-vis other advertising media. However, television’s share of total advertising appears to have stabilized in the later years of the period (1968–1972) at about 15 percent. Since total advertising expenditures relative to GNP have been declining over time, and since television’s share of total advertising has been stabilized in recent years, one finds that television advertising in the first half of the period was increasing relative to GNP and has been decreasing in the second half.

### Table X-3: Relative Proportion of Television Advertising to All Other Canadian Advertising Revenues and GNP, 1960–1973

<table>
<thead>
<tr>
<th>Year</th>
<th>Television Advertising Revenues (net)</th>
<th>Total Television Advertising Revenues as Percentage of Total Ad. Revenues</th>
<th>GNP</th>
<th>Relative Proportion of Television Advertising to All Other Canadian Advertising Revenues and GNP</th>
</tr>
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<tbody>
<tr>
<td>1960</td>
<td>50.0</td>
<td>38,359</td>
<td>1.30</td>
<td></td>
</tr>
<tr>
<td>1961</td>
<td>54.1</td>
<td>39,646</td>
<td>1.37</td>
<td></td>
</tr>
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<td>57.1</td>
<td>42,927</td>
<td>1.44</td>
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<td>70.2</td>
<td>45,978</td>
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<td>67.0</td>
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</tr>
<tr>
<td>1965</td>
<td>91.6</td>
<td>55,364</td>
<td>1.66</td>
<td></td>
</tr>
<tr>
<td>1966</td>
<td>100.4</td>
<td>61,428</td>
<td>1.62</td>
<td></td>
</tr>
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<td>1967</td>
<td>111.2</td>
<td>66,409</td>
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<td>1968</td>
<td>114.9</td>
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</tr>
<tr>
<td>1969</td>
<td>123.8</td>
<td>79,815</td>
<td>1.55</td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>130.6</td>
<td>85,610</td>
<td>1.33</td>
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<td>1971</td>
<td>137.8</td>
<td>91,402</td>
<td>1.48</td>
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<tr>
<td>1972</td>
<td>156.6</td>
<td>103,407</td>
<td>1.50</td>
<td></td>
</tr>
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<td>1973</td>
<td>179.0</td>
<td>116,678</td>
<td>1.51</td>
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<table>
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<tr>
<th>Medium</th>
<th>1971 Index of unit costs</th>
<th>1972 Index of unit costs</th>
<th>1973 Index of unit costs</th>
<th>1974 Index of unit costs</th>
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</thead>
<tbody>
<tr>
<td>Television</td>
<td>100</td>
<td>100</td>
<td>105</td>
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<tr>
<td>Radio</td>
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<td>107</td>
<td>99</td>
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<tr>
<td>Daily newspapers</td>
<td>100</td>
<td>100</td>
<td>106</td>
<td>96</td>
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<td>Consumer magazines</td>
<td>100</td>
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<td>100</td>
</tr>
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<td>Rotogravure</td>
<td>100</td>
<td>100</td>
<td>108</td>
<td>105</td>
</tr>
<tr>
<td>Outdoor</td>
<td>100</td>
<td>100</td>
<td>110</td>
<td>103</td>
</tr>
<tr>
<td>Transit (interior)</td>
<td>100</td>
<td>100</td>
<td>109</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>107</td>
<td>100</td>
</tr>
</tbody>
</table>

XI The Impact of Cable Television on the Viewing-Time to Canadian Broadcasting Stations

ECONOMETRIC MODEL

In Appendix C an econometric model is developed which measures the impact, in terms of viewing-shares, of cable television on the Canadian broadcasting system. The model hypothesizes that the total viewing-share attracted by Canadian television stations in any given market can be best explained by the number and types of Canadian and American stations available. Cable television, by importing distant stations, will cause a decline in the share attracted to local stations, and by importing distant American channels, will cause a decline in the share attracted to all Canadian stations considered collectively.

Due to the fact that many readers would find wading through a complex econometric model rather confusing and tedious, the model is placed in appendix form. The major findings of the model are summarized below. At the same time, however, it should be noted that many interesting and important relationships disclosed by the model are not given below.

The following then, are, the key findings of the model:

1. By increasing the availability of Canadian channels in a given market area, the viewing-share of Canadian television (that is, of all Canadian channels summed) will increase only marginally (about 4 percent for each channel added, assuming at least one U.S. channel is available). In other words, the audience attracted by new Canadian stations will come primarily at the expense of existing Canadian stations rather than from American stations.

2. The negative impact of the increased availability of U.S. channels on the viewing-share attracted to Canadian television (the sum of the shares of all Canadian stations available) can be very large, but the effect declines rapidly with the addition of successive U.S. stations. For example, the first American channel available in an area will attract 20–25 percent of total viewing-hours; the second will cause an additional decline in the viewing-share of Canadian television by 12–15 percent; the third, 9–11 percent; and the fourth, 4–5 percent.

3. Given equal channel choice, cable viewers watch Canadian television about 3–5 percent less than off-the-air viewers. Apart from this, cable viewers do not exhibit different viewing patterns from off-the-air viewers that have available the same numbers and types of channels. There are no significant differences for cable and noncable viewers in the marginal effects of additional Canadian and American channels upon the percentage share of viewing-time of Canadian stations.

4. While one may predict identical viewing patterns between off-air and cable viewers given equal channel choice (after allowing for the 3–6 percent divergence), the cable predictions must be treated with less confidence when being applied to particular populations. There is a substantially larger unexplained variation (as reflected by the lower $R^2$) for the cable regressions. This may be attributable to a greater discrimination in viewing patterns on the part of cable viewers when compared with off-the-air viewers (see Appendix C, page 177).

5. American alternate stations (that is, nonduplicated network stations and independents) exert a substantial negative impact on the viewing-share attained by any given Canadian station, but American duplicate stations (that is, stations of the same network affiliation as an alternate station) have a negligible impact. By increasing the availability of U.S. duplicate stations, little loss in viewing-shares will be experienced by Canadian stations, and the audience for these additional channels will come almost entirely at the expense of other U.S. stations.

6. Duplicated Canadian channels will cause a substantial decline in the audience to CBC affiliates. Alternate Canadian stations (that is, CTV affiliates and independents) appear to have no impact on the audience to the CBC. The primary cause of cable television's negative impact on the audience share of CBC stations is the carriage of other CBC stations, although alternate U.S. channels also exert an important negative impact.

7. CTV stations suffer from the availability of alternate U.S. channels. In fact, CTV appears to be an excellent substitute for American
channels and a poor substitute for the CBC. In this light one may conclude that the CBC is better fulfilling the goals set for broadcasting than is CTV. CTV stations have an insignificant impact on the audience to the CBC, and apparently the CTV audience comes from what would otherwise have gone to the U.S. networks. American alternate channels harm CTV affiliates to a much greater extent than they harm CBC affiliates.

In terms of public policy, the most important of the above findings are (1), (2), and (5).

**SPECIFIC MARKET STUDIES**

**London, Ontario**

The Television Bureau of Canada (TvB) conducted a detailed one-market study on the effects of cable television on the audience of CFPL-TV (London, Ontario). TvB is an organization wholly financed by the private sector of Canadian broadcasting and acts in an advisory capacity to advertisers. One might expect, therefore, that the TvB might tend to minimize any adverse influences cable might have on television advertising. The declared purpose of the study was to determine whether audiences were fragmented to such an extent that this station became an ineffective and uneconomical vehicle for advertising.1

The study found the home station captured about 75 percent of the noncable viewers at any time and, combined with a neighbouring CTV affiliate (CKCO-TV, Kitchener), accounted for about 50 percent of the cable audience at any given time. For cable and noncable homes combined, CFPL was found to account for about 50 percent of the available audience at any given time, while the other 50 percent was divided among six Canadian and fourteen American stations. From this TvB concluded that "It is quite apparent that it is uneconomical and unnecessary to buy more than the home station for local market coverage."

Table XI-1 reproduces the most significant results of the study. From this table it will be noted that London and area is highly penetrated by cable—62 percent of the homes watching television were subscribers. In the city of London itself, about 80 percent of the homes were subscribers. It is not possible to determine accurately the total impact of cable on the local station with the above data, however.

It can be seen that of the homes tuning in CFPL sometime during the day, cable homes tend to watch the station about 50 percent less than

---

noncable homes (row E). Also, while 86 percent of the noncable homes watch the station sometime during the day, only 79 percent of the cable homes do this (rows A and E).

If it can be assumed that cable homes would watch CFPL for 3 hours 41 minutes a day were cable taken away, and that 86 percent of cable homes would tune in sometime, it is possible to predict that the removal of cable would increase CFPL-TV's total viewing-time by 43,000 × .86 × (3 hrs. 41 min. – .72 × 1 hr. 29 min.), or approximately 106,000 hours. It is known that 60,900 homes on average watch CFPL for 2 hours 22 minutes a day, for a total viewing-time of 144,000 hours. Therefore, under these assumptions, the audience loss attributable to cable is 74 percent of the station's present audience, or 42 percent of its total expected audience in the absence of CATV.

There are many difficulties with the above analysis, not the least being that CATV homes in the London area tend daily to watch television 26 minutes more than do noncable homes, and one does not know whether to attribute this to the presence of cable itself through its increased diversity and clarity of signals, or to the fact that cable tends to select out homes with a strong preference for television, or to some combination of the two.

In summary, while CFPL-TV may have retained its position as the most effective medium for advertising in the area when compared to all other available channels, both its effectiveness and the effectiveness of television as a whole have been reduced. CFPL’s effectiveness has been reduced by its loss of audience; television’s effectiveness has been reduced due to the increased number of channels in the area competing with CFPL. In order to reach the 50 percent of the audience not tuned to CFPL, advertisers would have to buy time on twenty other channels located in such distant centres as Cleveland and Detroit.

Just as significant as the effects of CATV on the one station is its impact on the viewing-share of Canadian television itself. Noncable homes watch television daily a total of 128,200 hours and Canadian channels for 95 percent of these viewing-hours. Cable subscribers watch Canadian channels for 103,000 hours or for 47 percent of their total viewing-hours.

### Vancouver

In Vancouver, three Canadian channels and one U.S. channel are available off-the-air (CBUT, CHAN-TV, CHEK-TV, KVOS-TV). Cable systems import an additional six American channels. Table XI-2 shows both off-the-air and cable viewing-shares for these stations in November 1972.

<table>
<thead>
<tr>
<th>Station</th>
<th>Off-air audience viewing percentage share</th>
<th>Cable audience viewing percentage share</th>
<th>Difference in off-air view vs. cable share</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBUT</td>
<td>13,382 / 27.2</td>
<td>33,659 / 21.6</td>
<td>- 5.6 / - 20.6</td>
</tr>
<tr>
<td>KVOS</td>
<td>15,534 / 31.6</td>
<td>29,436 / 18.9</td>
<td>-12.7 / - 40.2</td>
</tr>
<tr>
<td>CHAN</td>
<td>13,500 / 27.5</td>
<td>27,831 / 18.0</td>
<td>-9.5 / - 34.5</td>
</tr>
<tr>
<td>KOMO</td>
<td>3,165 / 6.4</td>
<td>22,410 / 14.4</td>
<td>+8.0 / +125.0</td>
</tr>
<tr>
<td>KING</td>
<td>1,036 / 2.1</td>
<td>18,636 / 12.0</td>
<td>+9.9 / +471.4</td>
</tr>
<tr>
<td>KIRO</td>
<td>748 / 1.5</td>
<td>15,369 / 9.9</td>
<td>+8.4 / +560.0</td>
</tr>
<tr>
<td>CHEK</td>
<td>1,632 / 3.3</td>
<td>4,957 / 3.2</td>
<td>-0.1 / - 3.0</td>
</tr>
<tr>
<td>KCTS</td>
<td>104 / 0.2</td>
<td>1,864 / 1.2</td>
<td>+1.0 / +500.0</td>
</tr>
<tr>
<td>KTNF</td>
<td>29 / 0.6</td>
<td>1,216 / 0.8</td>
<td>+0.8 /</td>
</tr>
<tr>
<td>KTVW</td>
<td>0 / 0</td>
<td>94 / 0</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Bureau of Broadcast Measurement, special survey, November 1972.

It will be noted that a single U.S. station, KVOS, obtains 31.6 percent of the off-air viewing-hours and 18.0 percent of cable viewing-hours for an overall share of 22.0 percent. The availability of six additional U.S. channels by cable television has caused KVOS's total viewing-share to decline absolutely by 9.6 percent. KVOS-TV is harmed more by cable than any other station in Vancouver, as its cable audience share is 40.2 percent less than its off-air share; CBUT's cable share is 20.6 percent less than its off-air share, and CHAN-TV's cable share is 34.5 percent less than its off-air share.

Whereas KVOS-TV is the leading station with noncable audiences (its audience being 4.4 percent larger than that of CBUT and 4.1 percent greater than that of CHAN-TV), with cable its advantage over CHAN-TV is narrowed (0.9 percent) and over CBUT disappears. KVOS-TV's advantage over its two major Canadian rivals has effectively disappeared with CATV. While cable television has caused a substantial decline in the viewing shares of the Canadian stations, this lost viewing-share is split among six new American stations. It will be hypothesized in the
next chapter that the fragmentation of audiences among the additional U.S. stations introduced by CATV will in fact help the Canadian stations in spite of their declining audience shares.

**CBC Research Studies**

The Canadian Broadcasting Corporation has conducted a series of detailed studies on the impact of cable television on viewing-shares. A brief summary of the major findings of these studies is now given.

1. It is projected that by year end 1975, 45 percent of all Canadian households will subscribe to cable.
2. Cable viewers do not spend, on average, any more time watching television than noncable viewers.
3. U.S. stations in 1972 had a total share of 19 percent of all viewing in the country and 25 percent of all viewing of English language television.
4. CBC English language affiliates lose most because of CATV due to their pre-cable near monopolies, whereas CBC-owned and -operated stations lose little in audience with cable as they are located, by and large, in areas in which U.S. stations are available off-the-air. In addition CBC-owned and -operated station programming is more distinctive and hence a poorer substitute for U.S. programming than is the programming of other classes of Canadian stations.


**Appendix C**

**Econometric Model of the Impact of Cable Television on the Viewing-Time to Canadian Broadcasting Stations**

The data used in the econometric model below were supplied by the CRTC. The viewing statistics originated from a Bureau of Broadcast Measurement survey conducted for the period of 27 October to 9 November 1969. The survey estimated the average weekly viewing-hours for all television stations receivable in Canada for both off-air and cable viewers. These data were available for all Canadian counties and metropolitan areas in which television was viewed.

The model specifies that the audience share captured by any given television station will depend upon:

1. the station's network affiliation;
2. the number and types of television stations available off-the-air within the station's coverage area;
3. the number and types of channels that are available via cable; and
4. the percentage penetration of the cable system(s) in the station's coverage area.

The model distinguishes among four types of stations:

1. Alternate (or unduplicated) Canadian channels. Stations affiliated with the same network are considered to be duplicate channels.
2. Duplicate Canadian channels. These are equal in number to the total number of Canadian channels available less the number of Canadian alternate channels.
3. American alternate (or unduplicated) channels. Stations with different network affiliations and independent stations are considered to be alternate stations.
4. American duplicate channels. These are equal in number to the total number of American stations available less the number of U.S. alternate stations available.

The model accepts the proposition that cable viewers, given channel
choice equal to the options of off-air viewers, may exhibit substantially different viewing habits from off-air viewers.

Specifically, the model specifies that

$$V_i / V_o \cdot f(X_1, X_2, X_3, X_4),$$

where

- $V_i$ = total viewing-hours per week for the test station, off-air;
- $V_o$ = total viewing-hours per week for all television, off-air, in the station's coverage area;
- $X_1$ = number of Canadian alternate channels available off-air in the station's coverage area;
- $X_2$ = number of Canadian duplicate channels available off-air in the station's coverage area;
- $X_3$ = number of American alternate channels available off-air in the station's coverage area; and
- $X_4$ = number of American duplicate channels available off-air in the station's coverage area.

In other words, Eq. (1) specifies that a station's off-air viewing-share depends upon the number and type of stations available off-air ($X_1$$X_4$).

$$V_i / V_o \cdot f(X_1, X_2, X_3, X_4),$$

where

- $V_2$ = total viewing-hours per week for the test station, cable audience;
- $V_3$ = total cable television viewing-hours for all television in the station's coverage area;
- $X_1$ = number of Canadian alternate channels available on the cable;
- $X_2$ = number of Canadian duplicate channels available on the cable; and
- $X_3$ = number of American alternate channels available on the cable;

In other words, Eq. (2) specifies that a station's cable television share  depends upon the number and type of stations available off-air ($X_1$$X_4$).

$$V_i / V_o \cdot f(X_1, X_2, X_3, X_4),$$

where

- $V_i$ = total viewing-hours per week for the test station, cable audience;
- $V_o$ = total viewing-hours per week for all television, cable audience; and
- $X_1$ = number of Canadian alternate channels available on the cable;
- $X_2$ = number of Canadian duplicate channels available on the cable;
- $X_3$ = number of American alternate channels available on the cable;
- $X_4$ = number of American duplicate channels available on the cable.

In other words, Eq. (2) specifies that a station's total viewing-hours per week for the test station, cable audience.

$$V_i / V_o \cdot f(X_1, X_2, X_3, X_4),$$

where

- $V_2$ = total viewing-hours per week for the test station, cable audience;
- $V_3$ = total cable television viewing-hours for all television in the station's coverage area;
- $X_1$ = number of Canadian alternate channels available on the cable;
- $X_2$ = number of Canadian duplicate channels available on the cable; and
- $X_3$ = number of American alternate channels available on the cable;

In other words, Eq. (2) specifies that a station's total viewing-hours per week for the test station, cable audience.

$$V_i / V_o \cdot f(X_1, X_2, X_3, X_4),$$

where

- $V_2$ = total viewing-hours per week for the test station, cable audience;
- $V_3$ = total cable television viewing-hours for all television in the station's coverage area;
- $X_1$ = number of Canadian alternate channels available on the cable;
- $X_2$ = number of Canadian duplicate channels available on the cable; and
- $X_3$ = number of American alternate channels available on the cable;

In other words, Eq. (2) specifies that a station's total viewing-hours per week for the test station, cable audience.

$$V_i / V_o \cdot f(X_1, X_2, X_3, X_4),$$

where

- $V_2$ = total viewing-hours per week for the test station, cable audience;
- $V_3$ = total cable television viewing-hours for all television in the station's coverage area;
- $X_1$ = number of Canadian alternate channels available on the cable;
- $X_2$ = number of Canadian duplicate channels available on the cable; and
- $X_3$ = number of American alternate channels available on the cable;

In other words, Eq. (2) specifies that a station's total viewing-hours per week for the test station, cable audience.

$$V_i / V_o \cdot f(X_1, X_2, X_3, X_4),$$

where

- $V_2$ = total viewing-hours per week for the test station, cable audience;
- $V_3$ = total cable television viewing-hours for all television in the station's coverage area;
- $X_1$ = number of Canadian alternate channels available on the cable;
- $X_2$ = number of Canadian duplicate channels available on the cable; and
- $X_3$ = number of American alternate channels available on the cable.

In other words, Eq. (2) specifies that a station's total viewing-hours per week for the test station, cable audience.

$$V_i / V_o \cdot f(X_1, X_2, X_3, X_4),$$

where

- $V_2$ = total viewing-hours per week for the test station, cable audience;
- $V_3$ = total cable television viewing-hours for all television in the station's coverage area;
- $X_1$ = number of Canadian alternate channels available on the cable;
- $X_2$ = number of Canadian duplicate channels available on the cable; and
- $X_3$ = number of American alternate channels available on the cable;

In other words, Eq. (2) specifies that a station's total viewing-hours per week for the test station, cable audience.

$$V_i / V_o \cdot f(X_1, X_2, X_3, X_4),$$

where

- $V_2$ = total viewing-hours per week for the test station, cable audience;
- $V_3$ = total cable television viewing-hours for all television in the station's coverage area;
- $X_1$ = number of Canadian alternate channels available on the cable;
- $X_2$ = number of Canadian duplicate channels available on the cable; and
- $X_3$ = number of American alternate channels available on the cable;
viewing, but when applied to cable viewing may bias the results somewhat. Such a low percentage viewing-time when applied to CATV viewers may indicate the station is simply not very popular, in which case it should be included in the data. It may also indicate, however, that not all cable systems in the sample area (county or metropolitan) are carrying the station, or that this station is not being carried for the full broadcast day, in which case the station should not be included in the data. In cases in which several stations showed individual viewing-times of less than 0.5 percent of total viewing-time, but cumulatively accounted for over 1 percent total viewing-time, the number of stations said to be available was adjusted upward. For example, if five stations each accounted for 0.4 percent of total viewing-time, and cumulatively 2.0 percent of total time, two such stations were declared to be available.

A second, interacting standard, or guideline, was also used. In cases where the off-air viewership-share of a station was less than 10 percent, but its share of the cable viewing-time was more than twice its off-air share, the station was assumed to be unavailable off-air. Obviously, when speaking of off-the-air availability of stations, it is necessary to keep in mind the inherent unreliability of data from viewership surveys. A small number of viewership surveys, or a small but significant off-air viewing share, and which more than doubles its viewing-share when placed on an equal footing with other, less distant stations via cable, is perceived as a highly desirable station. Such a station with highly attractive programmes but the reception will be inferior. Hence, it attracts viewers but reception difficulties limit its audience share off-air. Such a large increase in these stations' relative viewing-shares when placed on cable is indicative of a general non availability off-air, even though some off-air viewers (whether through superior location, or expensive aerials, or sacrifice in picture quality) may spend considerable time watching the station.

This second standard combines with the first standard for those cases mentioned earlier when several stations, each with less than 0.5 percent of the total off-air viewing-time but cumulatively more than 1 percent, are investigated. If some of these stations obtain more than twice the off-air viewing-share on cable, they are declared to be unavailable off-air, and when cumulating the percentage shares of such marginal stations they are removed from the total.

These standards may more accurately be termed guidelines. In recognition of the arbitrariness of such rules, a case by case approach was taken, and other factors were brought in, where appropriate, to determine whether a station was or was not available. For example, if the county being studied was small in geographic extent, it was felt the error caused by omitting a station with a viewing-share of close to 0.5 percent might be greater than that caused by including it; the opposite held true for counties covering a large geographic area. The sample of counties and metropolitan areas was chosen to minimize the number of such decisions, however; this in turn served to limit the sample population.

Another factor limiting the sample size was the desire to prevent biases in the sample. Populations were chosen only in cases in which there was a significant cable presence in order that both sets of equations (off-air and cable viewing patterns) would reflect the same populations, differing only in factors related to the acts of subscribing and not subscribing to cable television. In this way, whatever biases that may have been left in the sample through the selection process should apply equally to both the off-air and cable TV equations, and, as a result, it is to be hoped that more confidence may be placed in any differences in viewing patterns that show up in the equations estimated for these two groups.

The exposition of the econometric model is given under the following headings: (a) the effects of CATV on viewing-time to the Canadian broadcasting system as a whole; and (b) the effects of CATV on CBC affiliated stations' viewing-time, and the effects of CATV on CTV affiliate's audiences.

Effects of CATV on Viewing-Time to the Canadian Broadcasting System as a Whole

Three functional forms were used: a simple regression of the number of U.S. and Canadian channels available on the percentage viewing to Canadian television stations, a Cobb-Douglas or double log function, and the simple regression described above including the square of the number of U.S. signals. In each case, the \( X_1 \) represent one plus the number of U.S. or Canadian signals available.

The results of the regression are given in Table C-1. In Table C-1, Eqs. (A1), (A2), and (A3) are derived from data on viewing patterns of off-air viewers only, while Eqs. (B1), (B2), and (B3) are derived from data on viewing patterns of cable television viewers only. The numbers in parentheses are t-statistics.

The symbols in Table C-1 are:

- \( V_P \) = total viewing-hours to Canadian television stations in survey area, off-air;
- \( V_C \) = total television-viewing-hours in survey area, off-air;
- \( X_1 \) = one plus number of Canadian channels available off-air;
- \( X_2 \) = one plus number of U.S. channels available off-air;
- \( V_{PC} \) = total viewing-hours to Canadian television stations in survey area, cable audience only;
- \( V_{PC} \) = total television-viewing-hours in survey area, by cable subscribers;
- \( X_3 \) = one plus the number of Canadian channels available on cable;
- \( X_4 \) = one plus the number of U.S. channels available on cable.

By inspecting the equations in Table C-1, the following conclusions may be reached:

1. The coefficients of the \( X_4 \), \( X_5 \), \( X_6 \), \( X_7 \), \( X_8 \), \( X_9 \), \( X_4^2 \) terms are significant in all cases at the 95 percent level of confidence.
2. The coefficient of the \( X_3 \) term is greater than the coefficient of \( X_4 \); similarly the coefficient of \( X_4 \) is greater than that of \( X_5 \). This indicates that the negative impact of successive U.S. channels is greater than the positive
The marginal effect of successive Canadian channels. At the same time, however, each additional U.S. channel will have a successively smaller negative impact and as shown by the significance of the $X_2^2$ term. Tables C-2 and C-3 show the estimated percentage viewing-times for the Canadian television system under varying Canadian and American channel availabilities. Table C-2 is derived from Eq. (A3) and is in reference to off-air viewers, while Table C-3 is derived from Eq. (B3) and is in reference to cable viewers. For example, Table C-1 estimates that in an area where three Canadian and two U.S. channels are available off-the-air, the Canadian channels together will attract 63 percent of the total viewing-time.

A closer study of Table C-1 reveals the following:

Table C-2. Estimated Percentage Viewing-Time of Canadian Television Channels by Off-Air Viewers for Various Combinations of Canadian and United States Channel Availability

<table>
<thead>
<tr>
<th>Number of Canadian channels</th>
<th>Number of American channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

First, the addition of a Canadian channel may be expected to increase Canadian viewing-time by about 4 percent. The marginal effect of a Canadian channel, then, is quite constant, regardless of the number of Canadian and American channels available, and the marginal effect is also quite small. This leads to the conclusion that most of the audience for additional Canadian channels will come at the expense of other Canadian channels rather than U.S. channels.

Second, the impact of additional American channels declines quite rapidly, but their negative impact tends to be much greater than the positive impact of Canadian channels for the relevant range of station line-ups. For example, the first American channel may be expected to cause a drop in Canadian viewing-time of 20-25 percent; the second, 12-15 percent; the third, 9-11 percent; the fourth, 4-5 percent. The fifth U.S. channel probably will have an impact of 0 to 2 percent.

Third, if the number of available Canadian and American channels is equal, the Canadian channels may expect to obtain 50-60 percent of total

<table>
<thead>
<tr>
<th>Number of Canadian channels</th>
<th>Number of American channels</th>
<th>( \epsilon )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0.019</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>0.024</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>0.032</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>0.044</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>0.066</td>
</tr>
</tbody>
</table>

Source: Eq. (A3),

\[ \frac{V_{it}}{V_{it}} = 1.111 + 0.044X_1 + 0.305X_2 + 0.029X_2^2 \]

\[ (2.739) \quad (-7.679) \quad (4.898) \]

\( R^2 = .73 \)
set out above.

In the first place, cable viewers have expressed a desire for additional Canadian stations. In the second place, cable equalizes the picture quality of all channels, but their negative impact upon the audience share of Canadian television tends to decline as successive American channels are added. The second American channel placed on the cable generally will cause a decline of 11-15 percent in the Canadian audience share; the third will cause a decline of 8-12 percent; the fourth, 4-7 percent; the fifth, 3-5 percent; and the sixth, 0-3 percent. Additional U.S. channels probably will not cause any significant change in the percentage share of audience for Canadian television. The higher the Canadian audience share before the addition of the original American channel (that is, the greater the number of Canadian channels), the greater will be the reduction in the Canadian audience share, and this reduction will approach the upper limits set out above.

All other things equal, cable viewers watch Canadian television slightly less than off-air viewers, the general range being 3-6 percent less. This small difference in the viewing habits of the two groups is surprising for two reasons. In the first place, cable viewers have expressed a desire for additional television signals by the very act of subscribing to CATV. This could be interpreted as an expression of stronger preference for American signals than for off-the-air viewers.

It appears, then, that CATV subscribers prefer Canadian television only slightly less than off-the-air viewers.

4. There are no significant differences for cable and noncable viewers in the marginal effects of additional Canadian and American channels upon the percentage share of viewing time of Canadian stations.

5. In cases where equal numbers of Canadian and American channels are carried on the cable, Canadian television’s share of total viewing time may be expected to range from about 58-45 percent, the lower figure applying when the number of channels is large. This, again, is somewhat lower than for off-the-air viewers.

6. For each functional form, the Rs for the CATV equations are significantly lower than the corresponding R’s for the off-the-air equations. The Rs, for example, of Eq. (B3) is .62, while that for Eq. (A3) is .73.

The regression results presented in Table C-3 do not indicate that by and large the “quality” differences were neutralized over the whole sample (that is, “good” and “bad” Canadian channels neutralized one another, as did “good” and “bad” U.S. channels). The phenomenon appeared upon the R2, but no attempt was made to take account of differing qualities of stations.

The study turns now from an analysis of viewing patterns for the Canadian broadcasting system as a whole to a study of viewing patterns for individual stations.

2. Stations with up to 19 percent off-air share of audience were declared to be unavailable if their cable share more than doubled.

Table C-3. Estimated Percentage Viewing-Time of Canadian Television Channels by Cable Subscribers for Various Combinations of Canadian and American Channels on Cable

<table>
<thead>
<tr>
<th>Number of Canadian channels</th>
<th>Number of American channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>69</td>
<td>54</td>
</tr>
<tr>
<td>73</td>
<td>58</td>
</tr>
<tr>
<td>76</td>
<td>61</td>
</tr>
<tr>
<td>79</td>
<td>64</td>
</tr>
<tr>
<td>83</td>
<td>68</td>
</tr>
<tr>
<td>86</td>
<td>71</td>
</tr>
<tr>
<td>90</td>
<td>75</td>
</tr>
<tr>
<td>93</td>
<td>78</td>
</tr>
<tr>
<td>96</td>
<td>81</td>
</tr>
</tbody>
</table>

SOURCE: Eq. (B3).

\[ F(9,16) = 0.034X_1 - 0.245X_2 + 0.019X_3 \]

\[ R^2 = 0.62 \]
Effects of CATV on CBC Stations’ Audience Size and
CTV Stations’ Audience Size

Separate regressions were run for CBC network stations and CTV stations. The remarks that follow regarding the selection of the sample apply to both the CBC and CTV regressions.

Regressions were run for cable and noncable viewers selected from the same geographical entity. In order to ensure that the test station in each case was a local station, the county or municipality in which the station is located was often used. When other counties or municipalities were used, by checking maps and the ratings of the station among off-the-air viewers, the excellence of the television signal in the area was confirmed.

Since the primary purpose of the exercise was to see how CATV’s importation of American channels affects local television stations, predominantly French speaking population areas and French language television stations were not included in the sample. The final sample size for CTV stations was twenty-two population areas and for the CBC, thirty-eight such areas.

Determining the expected viewing loss an affiliate will suffer due to the presence of cable involves three steps: (1) A determination of the expected share of the off-the-air audience the station will attain for various combinations of channels available off-the-air. (2) A determination of the expected share of the cable audience the station will retain for various combinations of channels available on the cable. (3) An application of the results of steps 1 and 2 to the formula developed earlier (Eq. 3).

Tables C-4 to C-6 present the regressions for CBC and CTV stations. In these tables, Eqs. (A-CBC1), (A-CBC2), (A-CBC3), (A-CTV1), and (A-CTV2) are based on data derived from off-air viewing patterns, the first three equations applying to CBC stations and the last two to CTV stations; Eqs. (B-CBC1), (B-CBC2), (B-CBC3), (B-CTV1), (B-CTV2), and (B-CTV3) are derived from cable audience data. Table C-4 contains equations using the simple regression form. Table C-5 contains equations using the Cobb-Douglas form, and Table C-6 contains equations using the C-6 form of the number of channels available in order to allow for a declining marginal impact of additional stations.

The symbols used in Tables C-4, C-5, and C-6 are now defined:

\begin{align*}
V_1 & = \text{local station’s total off-air viewing-hours for the survey week within the sample area;} \\
V_2 & = \text{total television viewing-hours off-air within the sample area during the survey week;} \\
V_3 & = \text{local station’s total cable viewing-hours for the survey week by audience within sample area;} \\
V_4 & = \text{total television viewing-hours by cable subscribers within the sample area during the survey week;} \\
X_1 & = \text{the number of Canadian alternate channels available over and above the test station. In equation numbers beginning with } A, X_1 \text{ refers to the availability of off-air signals; in equation numbers beginning with } B, X_1 \text{ refers to the availability of CATV channels.}
\end{align*}

\begin{align*}
X_2 & = \text{one plus the number of Canadian duplicate channels available;}
X_3 & = \text{one plus the number of American alternate channels available;}
X_4 & = \text{one plus the number of American duplicate channels available.}
\end{align*}
II

By studying Tables C-4, C-5, and C-6 one may make the following conclusions:

1. In Table C-4 all statistically significant coefficients (at the 95 percent level) have the expected negative sign (that is, the larger the number of stations available, the lower the viewing-share of the local station). The largest coefficient (and most statistically significant) belongs to the $X^2$ term, indicating that American alternate stations have the most important impact on the viewing-share of local stations. The coefficient of $X_3$ is always small and never significantly different from zero, indicating that U.S. duplicate stations have an insignificant impact on the viewing-time of a local station. Only in the case of CBC off-air reception, Eq. (A-CBC), is the presence of a Canadian alternate channel (generally CTV) of any importance as regards the viewing-share of the local station. The presence of a duplicate CBC station, however, does exert an important negative influence on the audience share of a local CBC station (see the coefficient of $X_3$ in Eqs. [A-CBC] and [B-CBC],).

2. In Table C-5, again, the importance of the number of U.S. alternate stations and the insignificance of the number of U.S. duplicate stations on the viewing-share of local stations are apparent. Duplicate Canadian channels also have an important negative influence on the viewing-share of CBC stations, but since CTV stations are only infrequently duplicated on the cable (most of the duplicate channels being CBC) the audience share of a local CTV affiliate is positively correlated with the number of duplicate Canadian channels available. The explanation for this apparent anomaly may be that in areas in which a CTV station faces competition from several CBC stations, the density of population would tend to be greater than areas in which there are few CBC stations. Population density is probably associated with high revenues for the CTV station. Given a highly profitable CTV affiliate operation, the station may be able to withstand American competition (and hence not suffer as great a decrease in audience) than poorer CTV affiliates located in less densely populated areas (and hence served by fewer CBC stations).

3. In Table C-6 the coefficient of $X_3$ is negative in all cases and significant at the 95 percent level of confidence in two out of the three equations. The coefficient of $X^2$ is positive in one equation (B-CTV3). These two observations indicate that U.S. alternate stations have a strong negative impact on the viewing-share of a Canadian station, and this negative effect may decline in importance as successive U.S. alternate stations are added, but the evidence is weak on this latter point.

3. This means that CTV stations generally have little or no effect on the viewing-share of CBC. It appears viewers do not consider CBC a substitute for CTV, and the latter's audience is derived in large part from what would otherwise have gone to U.S. stations. The exception, in Eq. (A-CBC), probably reflects instances in which only two stations are available, a CBC and a CTV channel, in which case CTV does exert an impact on the CBC station. But when U.S. channels are available (see the cable Eqs. [A-CBC] and [B-CBC]), CTV and CBC do not appear to compete.

4. Duplicate CTV stations are only rarely available.
The coefficient of \( X_4 \) (U.S. duplicates) is never significantly different from zero, indicating that these stations have only an insignificant impact on the viewing-shares in question.

In all cases the coefficient of \( X_2 \) (the number of duplicated Canadian stations) is significant and relatively large. Again \( X_2 \) is associated with a decrease in the viewing-share of a CTV station and with an increase in that of a CTV station (although in the latter case the coefficient of \( X_2 \) is negative).

The coefficient of \( X_1 \) (Canadian alternates) is negative (as would be expected) in the two cases in which it is significant. And again, in the one instance in which the coefficient of \( X_1 \) is positive, the coefficient of \( X_2 \) is negative, indicating that in this equation (B-CBC3) the coefficient is not significantly different from zero.

Table C-7 gives the estimated audience shares a CBC station will attract under some typical channel availabilities and the impact cable television is expected to have on the viewing-share of a CBC affiliate. Table C-7 is based on Eqs. (A-CBC2), (B-CBC3), and (E). Column 5 gives the results from applying the formula

\[
\Delta \tilde{V} = \left[ \frac{V_1 - V_2}{V_3} \right] \cdot W_1 \cdot H_2
\]

(from Eq. [3]) to the CBC audience share data, where \( \Delta \tilde{V} \) is the estimated loss of total audience due to the presence of cable television. The parameter \( d \) was calculated to be 2.7, reflecting the national average in 1966 of persons over fourteen years of age per household.\(^5\) The parameter \( W_3 \) was taken to be 23.5 hours/week.\(^6\) A third parameter, \( W_3 = 19.5 \) hours/week, was used to estimate average weekly prime-time viewing-hours (prime time is 7-11 p.m.) and calculations in column (6) show the estimated change in prime-time audience due to cable.

The \( X_1 \) in Table C-7 represent one plus the number of channels of various types that are available. The first seven rows of Table C-7 identify channel availabilities off-air and on cable, while rows (8) to (12) show the effect of increasing numbers of channels available on cable over the number available off-the-air.

Row (1), which estimates the audience for a local station when only one Canadian alternate (a CTV station) is available, may overestimate the audience loss due to cable. No cable system carrying only two Canadian channels was included in the sample, and so this sort of extrapolation is unreliable. Similarly, row (4), which estimates viewing-shares when one Canadian alternate and one Canadian duplicate channel are available, is atypical, and the drop of some 12 percent in cable viewing-time may be too large.

Apart from rows (1) and (4), Table C-7 shows that in cases in which CATV only serves to strengthen signals that are already available off-the-air, without adding more distant signals, the audience share of a local CBC station should not be expected to drop off significantly for CATV sub-

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The cable share is only 19 percent of the off-air share. Shares of viewing-time are 73.5 percent off-the-air and 14.0 percent on cable (a drop of 38 percent from the off-air share). This represents a total of Canadian duplicate channels available off-the-air and CATV imports an estimated 10 percent of total viewing-time attained by the local station on cable may be expected to be 87.7 percent of total viewing-time when competing with two CBC stations. These results indicate that the only danger inherent in CATV vis-a-vis the Canadian broadcasting system is through the ability of cable TV to increase channel availability. This is not meant to minimize this danger, of course, but it bears emphasizing that CATV by itself does not appear to change viewing habits.

The concern expressed by the CRTC, broadcasters, and other observers of Canadian broadcasting over the deleterious effects of CATV on audiences for local stations is shown to be well founded by rows (8) to (12) of Table C-7. This part of the table gives the estimated loss in viewer-hours for stations when CATV is allowed to bring in distant signals that are unattainable off-the-air.

For example, row (8) shows that when one Canadian alternate and one Canadian duplicate channel are available off-the-air and CATV imports an additional Canadian alternate and one American signal, the percentage of viewing-time attained by the local station on cable may be expected to be some 20 percent less than off-the-air, 36.0 percent compared to 57.7 percent (a drop of 38 percent from the off-air share). This represents a loss in viewing-hours per cable household per week of 13.8 hours, or, in total, 13.8H_avg hours and 11.4H_avg prime-time hours.

If, as in row (12), one Canadian alternate is available off-the-air, while CATV carries two Canadian alternates, three Canadian duplicates, three American alternates, and three American duplicates, the local station's share of viewing-time are 73.5 percent off-the-air and 14.0 percent on cable, representing a total loss in viewer-hours of 37.8H_avg hours per week. The cable share is only 19 percent of the off-air share.

Table C-8 is similar in form to Table C-7, except that in this instance the table shows the anticipated audience shares (cable and off-air) for a CTV station and the estimated impact of CATV on viewing-hours for various channel availability cases. Table C-8 is derived from regressions (A-CTV1) and (B-CTV3), as well as Eq. (3).

In column (4) of Table C-8 there is one estimate which seems unreasonable, and this occurs in row (4). It is improbable that a CTV affiliate would obtain 87.7 percent of total viewing-time when competing with two CBC channels on cable. The reason that the underlying equation (B-CTV3) failed to perform well in this instance is due to the fact that cable systems

<table>
<thead>
<tr>
<th>Row no.</th>
<th>CTV affiliate off-air</th>
<th>CTV affiliate on cable</th>
<th>CTV2 alternate off-air</th>
<th>CTV2 alternate on cable</th>
<th>CTV2 duplicate off-air</th>
<th>CTV2 duplicate on cable</th>
<th>CTV3 alternate off-air</th>
<th>CTV3 alternate on cable</th>
<th>CTV3 duplicate off-air</th>
<th>CTV3 duplicate on cable</th>
<th>Audience share (percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>36.0</td>
<td>57.7</td>
<td>36.0</td>
<td>57.7</td>
<td>36.0</td>
<td>57.7</td>
<td>36.0</td>
<td>57.7</td>
<td>36.0</td>
<td>57.7</td>
<td>36.0%</td>
</tr>
<tr>
<td>9</td>
<td>36.0</td>
<td>57.7</td>
<td>36.0</td>
<td>57.7</td>
<td>36.0</td>
<td>57.7</td>
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<td>57.7</td>
<td>36.0</td>
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</tr>
<tr>
<td>10</td>
<td>36.0</td>
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<td>36.0</td>
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<td>36.0</td>
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<td>36.0%</td>
</tr>
<tr>
<td>11</td>
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<td>36.0</td>
<td>57.7</td>
<td>36.0</td>
<td>57.7</td>
<td>36.0</td>
<td>57.7</td>
<td>36.0</td>
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<td>36.0%</td>
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<td>57.7</td>
<td>36.0</td>
<td>57.7</td>
<td>36.0</td>
<td>57.7</td>
<td>36.0%</td>
</tr>
</tbody>
</table>
seldom, if ever, carry only three Canadian channels and no American channels, and such backward extrapolation has led to a large error. The remainder of column (4) (apart from row [1] which is treated below) appears quite reasonable and the high $R^2$ of .91 for the supporting equation means the estimates in the column should be quite reliable.

Table C-8 shows that when at least one U.S. signal is available off-the-air, and when the CATV system carries the same number and types of channels as are available off-the-air, rows (2), (3), (5), (6), (7), the CTV station may experience a slight decline in its viewing-share due to the increased clarity of the American signals. Rows (1) and (4) indicate, however, that when no American signal is available off-the-air or on the cable, the CTV share may rise due to CATV. The reservations mentioned above for the element in column (4) row (4) also hold for column (4) row (1), so that the increases in the cable viewing-shares of CTV stations as shown may be inflated but they do reflect a tendency. This would be due, probably, to the regional character of the CTV stations so that cable often improves their picture quality.

As would be expected, when CATV imports distant American signals that are otherwise not available, the CTV station suffers significantly. When Tables C-7 and C-8 are studied together, some interesting conclusions may be reached.

1. A local CBC television station is able to retain its off-the-air audience better than a CTV station when the number of off-air channels is few (compare rows [1], [2], [4]). This is the case in which neither the CBC nor the CTV station faces substantial duplication.

2. When the number of channels available off-the-air is large, the CTV station is better able to retain its audience share. This is due in part to the fact that the CTV channel now faces direct competition from other CTV channels, whereas the CTV affiliate generally faces no such duplication (see rows [5] and [6]).

3. An additional American off-the-air alternate will affect both types of Canadian stations about equally.

4. Duplicate American channels may prove to be relatively more harmful to CTV than CBC stations.

5. A CTV outlet appears to fare somewhat better on cable than a CBC outlet when facing only limited competition (rows [1], [2], [4]), due perhaps to the improvement in the former's signal.

6. When the number of channels on cable is large, the CTV station generally will gain a larger audience share than the CBC station, in part because of the frequent duplication of CBC channels on cable in contrast to the infrequent duplication of CTV channels. Thus in row (5), with one duplicate Canadian channel, the CTV station's share of audience is 25.1 percent while the CBC station now faces direct competition from other CBC channels, whereas the CBC affiliate generally faces no such duplication (see rows [5] and [6]).

7. An additional American off-the-air alternate will affect both types of Canadian stations about equally.

8. Duplicate Canadian channels may prove to be relatively more harmful to CTV than CBC stations.

9. A CTV outlet appears to fare somewhat better on cable than a CBC outlet when facing only limited competition (rows [1], [2], [4]), due perhaps to the improvement in the former's signal.

10. When the number of channels on cable is large, the CTV station generally will gain a larger audience share than the CBC station, in part because of the frequent duplication of CBC channels on cable in contrast to the infrequent duplication of CTV channels. Thus in row (5), with one duplicate Canadian channel, the CTV station's share of audience is 25.1 percent while the CBC station's share is only 20.5 percent, but in rows (6) and (7), the number of duplicate channels rises to two and three respectively.

11. Duplicate American channels also harm the CTV stations more than the CBC stations on cable.
XII The Economics of Broadcast Advertising

THE IMPORTANCE OF REACH

While it has been established that through time television has been able to maintain its position as a vehicle for advertising vis-à-vis other media in the face of cable growth, at the same time it has been shown that cable television, through the importation of distant signals, can have a strong negative impact on the audience share of local television stations. Since one would suppose that the service sold by broadcasters to advertisers is viewers to specific commercial messages, it would be anticipated that decreased audience size would lead to declining advertising revenues. As declining revenues have not been observed (either absolutely or relative to other advertising media), it follows that there is not a direct relationship between audience size and advertising revenues for television stations. This is obviously an important hypothesis for projecting the impact of cable on broadcasting, and so this chapter explores in some depth the determinants of advertising revenues for Canadian television stations.

The time available for broadcast advertising is characterized by an inelastic supply and a less inelastic demand. The inelasticity of supply is due to technical factors (spectrum scarcity), international treaty, government regulations (governing both the time devoted to advertisements and the number of stations), and policies of the broadcasters (especially the CBC).

Broadcasters are able in practice, however, to affect the supply of commercial time to some extent. By making commercials more effective, they can increase the "productivity" of a given unit of time. This effect interacts with the tendency toward shorter commercials (30-second instead of 60-second), and both effects serve to increase the supply of time.

Advertising revenue fluctuations will emanate in the main, however, from factors on the demand side. The advertisers' demand for Canadian television time is a highly complex area of study, and CATV is inseparable from it. In studies predicting the demand for television advertising time, it has been traditional to regress broadcast advertising revenues against total viewing-hours (or total prime-time viewing-hours, or total viewing-hours for people over eighteen years). As has been seen, however, this simple relationship does not lend itself to an explanation of the anomaly of increasing television revenues in the face of declining audience size.

The economic theory of advertising is easily summarized. Advertising is treated as any other cost of production, except that it will change the slope and position of the demand curve of the advertised product or service. In the partial equilibrium situation, the marginal conditions hold and the optimal amount of advertising expenditure is determined.

The demand for advertising time will depend at the very least upon the proportion of prospective customers reached by an advertisement, the length of time in which the message remains in the mind of a given proportion of these prospective customers, the persuasive power of the advertisement, and the advertising practices of competitors. In a world of certainty, an advertiser's marginal cost of reaching and convincing a customer will be the same from medium to medium and within each medium. For instance, if a full-page newspaper advertisement and a 60-second television commercial were equally effective in persuasive powers (x percent of all readers and viewers purchased the product), the amounts spent for the advertisement in each medium would be equal on


a cost per thousand people reached. Similarly, the cost per thousand potential customers among newspapers and among television stations would be equal, and at the margin would equal the marginal revenue forthcoming from the additional advertising dollar spent less other costs of production.

In practice, uncertainty and irrationality mean the above type of analysis has only limited value. Major television rating surveys are carried out only twice a year in Canada. This means that an advertiser, purchasing time well in advance of the audience surveys, will find it difficult to predict with any accuracy the audience that will view a specific advertisement in a given time period on a station. Programmes on a station rise and fall quickly in popularity, and the programmes offered by competing stations will change. It is impossible for advertisers to forecast accurately the cost per 1,000 viewers actually reached.

Rating surveys are carried out much more frequently in the United States, and advertisers are better able to assess the quality of their "buy." Since greater attention is paid to the ratings of individual programmes in the United States, and because the charges per unit of time vary accordingly, Rolla Park 7 was able to obtain an \( R^2 \) of .93 when regressing station revenues against average prime-time audience (and the square of audience size) while for Canada the \( R^2 \) in such a regression is only .83 (see [Eq. XII-I]).

Instead of audience size, then, advertisers in Canada are forced to search for a different (less desirable) measure upon which to base their demand for a station's time. The measure used in practice is which is the number of homes tuning in the station sometime during the week (that is, net weekly circulation). 8

Table XII-1 presents a series of regressions in which revenues to privately owned television stations in two years (1970 and 1972) are "explained" by various measures of audience size. As will be noted from the table, in both 1970 and 1972 the variable "reach" went furthest in accounting for the variation in television station advertising revenues.

---

5. The expenditures of advertisers need not equal the revenues received by the medium, however, since the former may include production costs. Since these are much higher for television, one would expect on this account that television revenues per advertising dollar would be lower than for newspapers.

6. However, as stated earlier, there are restrictions placed upon the amount of advertising time available on broadcast stations while there is no such restriction on the space available in newspapers. This will raise the cost per thousand in television relative to that of newspapers.

7. Park, Potential Impact of Cable Growth.

8. As will be explained below, reach is an aggregated measure of a television station's "output." While individual advertising decisions may be based on other criteria (especially gross rating points), when aggregation occurs by surveying total expenditures by all advertisers on a given station, it will be shown that reach is the best measure of a station's output.

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Table XII-1: Regression Explaining the Variation in Television Station Advertising Revenues, 1970, 1972

<table>
<thead>
<tr>
<th>Equation</th>
<th>Dependent Variable</th>
<th>Coefficient(s)</th>
<th>( R^2 )</th>
</tr>
</thead>
<tbody>
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<td>(XII-1)</td>
<td>1970 R</td>
<td>-3002.1</td>
<td>.483</td>
</tr>
<tr>
<td>(XII-2)</td>
<td>1970 R</td>
<td>203.38</td>
<td>.523</td>
</tr>
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<td>1970 R</td>
<td>483.070</td>
<td>.650</td>
</tr>
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<td>(XII-4)</td>
<td>1970 R</td>
<td>67.665</td>
<td>.705</td>
</tr>
<tr>
<td>(XII-5)</td>
<td>1970 R</td>
<td>-4736.4</td>
<td>.807</td>
</tr>
<tr>
<td>(XII-6)</td>
<td>1970 R</td>
<td>-46736.4</td>
<td>.825</td>
</tr>
<tr>
<td>(XII-7)</td>
<td>1970 R</td>
<td>-42984</td>
<td>.859</td>
</tr>
<tr>
<td>(XII-8)</td>
<td>1970 R</td>
<td>-42894</td>
<td>.863</td>
</tr>
<tr>
<td>(XII-9)</td>
<td>1970 R</td>
<td>-3882.4</td>
<td>.869</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equation</th>
<th>Dependent Variable</th>
<th>Coefficient(s)</th>
<th>( R^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>(XII-1)</td>
<td>1972 R</td>
<td>213.52</td>
<td>.545</td>
</tr>
<tr>
<td>(XII-2)</td>
<td>1972 R</td>
<td>5461</td>
<td>.625</td>
</tr>
<tr>
<td>(XII-3)</td>
<td>1972 R</td>
<td>-400700</td>
<td>.650</td>
</tr>
<tr>
<td>(XII-4)</td>
<td>1972 R</td>
<td>-4736.4</td>
<td>.807</td>
</tr>
<tr>
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<td>(XII-7)</td>
<td>1972 R</td>
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<td>.863</td>
</tr>
<tr>
<td>(XII-8)</td>
<td>1972 R</td>
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<td>.869</td>
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<tr>
<td>(XII-9)</td>
<td>1972 R</td>
<td>3629.2</td>
<td>.869</td>
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Sources: CRTC, confidential financial data.
explaning the variation in revenues across stations as reflected in the high $R^2$. The symbols used in Table XII-1 are defined as follows:

$$R = \text{television station's total revenue for year, in thousands of dollars;}$$
$$Re = \text{station's reach, in hundreds of viewers from BBM survey;}$$
$$V = \text{total weekly viewing-hours to station, in hundreds of hours from BBM survey;}$$
$$A = \text{average 1/4 hour prime time (7-11 PM) audience, in hundreds of viewers;}$$ and

$$Q = \text{market quality index, mean value 100.}$$

The sample size used for the 1970 regressions was fifty-four privately owned television stations, and for the 1972 regressions, fifty-one privately owned stations. The revenue data were derived from the usual financial returns private stations are required to submit to the CRTC.

It will be noted by studying the $R^2$s of Table XII-1 that reach has much greater explanatory power as regards the variation in station revenues than the other measures of audience size used (average prime-time audience and total viewing-hours). Reach is in fact a good proxy for the population within a station's coverage area, since most stations are assured that a very high proportion of the viewers within their reception areas will tune in the station sometime during the week. Reach, however, is a poor proxy for what the stations theoretically sell the advertiser—actual viewers to specific advertisements. In some sense, then, advertisers are not purchasing exactly what they want (and this fact, if not seen, explains the anomaly previously discussed that has allowed advertising revenues to grow in the face of increased competition for the population within a station's coverage area, since most stations are assured that a very high proportion of the viewers within their reception areas will tune in the station sometime during the week. Reach, however, is a poor proxy for what the stations theoretically sell the advertiser—actual viewers to specific advertisements. In some sense, then, advertisers are not purchasing exactly what they want (and this fact, if not seen, explains the anomaly previously discussed that has allowed advertising revenues to grow in the face of increased competition through CATV). As this is such an important point, it is useful to spend some time in an effort to explain why advertisers have thus far concerned themselves with reach (potential audience) rather than actual audience size.

Before proceeding, the reader should be cautioned that many knowledgeable people active in the advertising business dispute the hypothesis that advertisers purchase the reach of a television station and when confronted with the proposition state that advertisers are much more sophisticated in their buying practices and in fact purchase time on the basis of gross rating points. The author is not attempting here to tell advertisers what they are doing. Rather, it will be argued that, when considered collectively, the practices of individual advertisers in purchasing station time on the basis of gross rating points are equivalent to purchasing reach. Before addressing the significance of reach as the best measure of a station’s output (that is, the best predictor of a station’s revenues), it is necessary to demonstrate that the micro behaviour of an individual advertiser in purchasing gross rating points, when aggregated across all advertisers, leads to the observation that reach, rather than actual viewing-hours, is the primary determinant of a station’s revenues.

For the discussion that follows it is useful to define measures in common use in rating surveys. In the following list of definitions it is necessary to distinguish between “micro” variables (variables related to the audience of a particular advertiser) and “macro” variables (variables related to the audience of a particular television station) and to trace out the relation between a particular micro variable and a particular macro variable.

**Rating:** The percentage of potential audience tuning in a particular station during a particular (quarter-hour) time period. This is a micro variable whose macro equivalent is roughly percentage of total viewing-hours attained by a station for the survey week compared to the total viewing-hours for the survey area during the week.

**Gross rating points:** The sum of individual ratings delivered by a number of stations in a common sample area. For example, if three messages are broadcast on programmes (which may be on different stations in a common market or the same station at different times) with respective ratings of 20 percent, 30 percent, and 40 percent, the gross rating points for the message are 90. GRP are a micro measure offering a description of the total impressions being delivered by a particular spot schedule without regard to audience duplication in a
market. The macro equivalent of GRP is total viewing-hours per week when standardized for community size. That is, gross rating points times an index of population is highly correlated with total viewing-hours.

Reach: At the micro level, the number of different individuals exposed to one or more announcements during a specified period of time (often expressed as a percentage of individuals in the sampled area). At the macro level, reach is the number of different individuals tuning in to a particular station during a specified period of time (that is, net weekly circulation).

Frequency: A micro concept denoting, on average, the number of times each individual in the survey area receives a message over a given period of time. Frequency has meaning within the micro context only.

At the micro level, the measures are related by the following formula:

\[ \text{GRP} = \text{Reach} \times \text{Frequency} \]

Baker, Lovick, Ltd.\textsuperscript{10} states that the most common and preferred method used by advertisers to allocate their advertising budgets among television stations is GRP per market. Allocating expenditures by GRP levels involves weighting individual gross rating point levels by some measure of the market's potential (either by last year's sales or by population). Allocating expenditures by GRP weighted by last year's sales would involve the following steps:

1. Determine for each market that market's contribution to total sales for the last year.
2. Estimate the average ratings of a television spot during a selected time period for each market.
3. Divide the cost of a spot by its rating points to derive an average cost per rating point for each market.
4. Add the individual market costs per rating point to arrive at a total and overall average cost per rating point.
5. Apply the overall average cost per rating point to the total advertising budget to estimate the total GRP the budget will buy.
6. Allocate total GRP to each market based on the previous year's sales.
7. Divide individual market gross rating point levels by average spot ratings to arrive at the number of spots for each market.

8. Multiply the number of spots by the cost of a spot to determine total expenditure in each market.

To summarize, under the GRP method, the number of GRP to be allocated to a given market is determined by that market's potential (that is, population or last year's sales) and the firm's total advertising budget.\textsuperscript{11} Total advertising expenditures per market equal the number of GRP allocated to the market times the cost of each gross rating point. The cost of a gross rating point is the spot rate divided by the average rating of a programme. Note that the GRP level is determined independently of the audience delivered by any particular message (rating). Total expenditures in a market equal the GRP level times the spot rate divided by the average rating. The spot rate is a result of bargaining between the advertiser and the broadcaster. In addition to total audience delivered by the station, a factor that will enter the setting of the spot rate is the ease of substitution into competing stations or media.

Assume first that there are many good competing advertising media in the community and that the broadcaster has little monopoly power in setting the spot rate. Cost per thousand for all media in the community will then be equal, and the spot rate will be a direct function of the average rating:

\[ \text{TE} = \text{GRP} \times \frac{\text{spot rate}}{\text{average rating}} \]

Therefore,

\[ \text{TE} = \text{GRP} \times \frac{f(\text{average rating})}{\text{average rating}} \]

where

\[ \text{TE} = \text{total expenditure per market.} \]

But it has already been shown that the number of GRP allocated by the firm to any particular market is based on the market's potential (that is, last year's sales or population). Neutralizing for differences in average disposable income, on average last year's sales will be a direct function of population. Therefore,

\[ \text{TE} = f(\text{population}). \]


\textsuperscript{11}The total advertising budget of a firm for all television generally is beyond the scope of this analysis and hence is treated as an exogenous variable.
Since reach is in fact a good proxy for population, as most viewers within a station's coverage area will tune in the station at least once during the survey week, it follows that

\[ \text{TE} = f(\text{reach}, \text{income}). \]

Should the assumption of a constant cost per thousand across all advertising media not be warranted, but rather it is felt that there are few good substitutes for television advertising, then the broadcaster may be depicted as setting his rate card monopolistically\(^\text{12}\) and the spot rate will no longer be a function of the average rating only. In this case

\[ \text{TE} = f(\text{reach}) \times \text{rate card} \times \text{average rating} \]

where the rate card is set monopolistically and is exogenous.

In this second formulation, the model predicts that the greater the number of available channels (including U.S. channels imported by CATV), the greater will be the revenues of the local broadcaster, since the average rating will vary inversely with the number of channels. A test for this construction of the model would be

\[ \text{TE} = f(\text{reach}) + g(\text{number of U.S. channels}), \]

where the expected sign of the coefficient of the number of U.S. channels is positive. This test is carried out below.

To summarize, allocating advertising budgets by the GRP method is equivalent to purchasing a station's reach (potential coverage) in cases where the broadcaster has little ability to set price (the competitive situation). If the broadcaster is a price-maker (that is, has monopoly power, as appears likely), then reach plus the number of available signals will explain revenues, both being positively correlated with revenues.

The next question that must be answered is why advertisers would content themselves with reach, a measure of potential coverage, rather than actual viewing-hours when allocating their budgets to particular stations.\(^\text{13}\) The first reason that reach is the most important determinant of broadcaster revenues is that major rating surveys are undertaken only twice a year in Canada. While actual audience may show considerable variation within a short period of time as programmes rise and fall in popularity, reach (or potential audience) shows a great deal more stability through time. With the infrequency of audience surveys, advertisers may place more weight on the stable measure of a station's potential than on the more volatile (and therefore inaccurate over time) measure of actual audience.

Second, not only are advertisers unable to determine their audience at a point in time accurately, but they also are unable to determine the effects of their advertisements on viewers. Thus far advertisers have not been able to separate out the effects of a change in advertising policy from other variables. They also have been unable to give weights to the relative effectiveness of different advertising media. This means that advertisers have no way of estimating marginal revenue from an increase in advertising. Without accurate information regarding the number of viewers and without estimates of the effectiveness of advertising, the economic theory of advertising breaks down, and advertisers are forced to rely upon rules of thumb. The reader should be cautioned before proceeding that for advertising policy there are as many special cases as there are advertisers. In the following paragraphs only broad generalizations, derived chiefly from interviews with broadcasters and people involved in selling time to advertisers, are discussed.

Often a firm's advertising budget appears to be fixed to some percentage of retail sales or corporate profits. One thus finds the phenomenon whereby the advertising budget falls as sales fall and rises as sales rise, whereas one would expect advertising expenditures to rise as sales drop in order to effect a recovery. It is impossible to generalize on the allocation of the advertising budget among different media that would be relevant to the analysis. A related factor mentioned in interviews was that television advertising confers status upon the firm and its management, and this is apart from and in addition to advertising to increase sales. While it would be difficult to measure the relative importance of this status reason for advertising, it will to some degree mean that station revenues are even less responsive to changes in audience size. The "glamour" of television may compensate for sagging audiences.

Another departure from cost per thousand is that influences advertising decisions is the fact that there are certain "must-buy" stations, generally those located in the provincial and federal capitals. Cost per thousand is not as important a factor for stations located in these centres as

\[ \text{station's potential for sales} \]

rather than on the basis of the station's ability to induce sales?
for stations in such municipalities as Dawson Creek, Rivière-du-Loup, Pembroke, and Red Deer. In fact, it has been stated that many national advertisers are really quite indifferent as to whether their messages reach people in such small population centres, and stations located there survive only because the networks pressure these stations upon network advertisers, albeit by including them in the contract almost as a bonus for which the advertiser is charged a much lower rate. CTV network stations are located by and large in “must-buy” centres (although recent years have witnessed an impressive effort to extend the service to lesser-populated areas), and for this reason it may be expected that the rates charged for a time period by CTV stations will be less responsive to audience size than will be the rates charged by privately owned CBC affiliates, which are mainly located in these smaller communities. Thus far, television stations have been able to defend themselves against shrinking audiences due to CATV where necessary. CHAN in Vancouver, for instance, has recently built a string of rebroadcasting stations in west-central British Columbia, thereby maintaining its audience by enlarging its coverage area in the face of cable competition. Broadcasters also have been able to maintain revenues by offering advertisers “package deals,” for example, selling one prime-time advertisement at the regular rate and throwing in a free nonprime-time spot, or in cases where the demand for prime-time is heavy, selling a prime-time spot only when a nonprime-time spot is also purchased. Thirty-second commercials are relatively more expensive than sixty-second commercials (two thirty-second commercials may sell for 150 percent of the price of a sixty-second commercial), and the stations may push shorter commercials.

All of these factors—the variability through time of ratings to specific programmes and the infrequency of audience surveys, the difficulty of assessing the effectiveness of advertising and the necessity of relying on rules of thumb to determine advertising budgets, the status given by television advertising, and the ability of stations to compensate for declining audiences—as well as a degree of monopoly power held by the broadcaster—help to explain why reach, rather than viewing-hours, best explains broadcaster revenues.

In summary it is the hypothesis of this chapter that advertisers have to date based their television advertising expenditures on reach rather than actual audience size. So long as a station is able to maintain its predominant position of reach in a market against outside competition through cable’s importation of channels (given current advertiser practice), the station will not be hurt financially by the increased competition; while actual audience size will decline, potential audience (reach) should not decline significantly in spite of the increased competition. Two tests are now applied to the hypothesis: first, an econometric model testing the effect of the availability of U.S. channels on revenues accruing to Canadian stations by market, and second, a close inspection of the Vancouver market.

Regressions, based on a sample of forty-two markets in Canada for the year 1972, were run using total revenues accruing to all private television stations situated in the market as the dependent variable and a series of independent variables, including the number of U.S. stations with various audience shares in the local Canadian market. If the hypothesis holds, the coefficients of the variables representing the number of U.S. stations should be positive. The results of these regressions are presented in Tables XII-2 and XII-3.

The symbols used in these tables are defined as follows:

\[ R^* = \text{total revenue in thousands of dollars accruing to all privately owned television stations situated in a given market.} \]
\[ Re^* = \text{common coverage area population estimates. Data from CRTC financial returns.} \]
\[ A^* = \text{average quarter-hour prime-time audience in hundreds of persons.} \]
\[ V^* = \text{total viewing hours accruing to all Canadian private television stations situated in market during survey week in hundreds of hours.} \]
\[ D = \text{dummy variable. Zero if no CBC owned and operated station in the market, 1 if there are one or more such stations located in the market.} \]
\[ U_{S_1} = \text{one plus the number of U.S. stations that capture 0-10 percent of total viewing hours of audience in the market.} \]
\[ U_{S_2} = \text{one plus the number of U.S. stations that capture 10.1-20 percent of total viewing hours of audience in the market.} \]
\[ U_{S_3} = \text{one plus the number of U.S. stations that capture 20.1-30 percent of total viewing hours of audience in the market.} \]
\[ U_{S_4} = \text{one plus the number of U.S. stations that capture over 30.1 percent of total viewing hours of the audience in the market.} \]
\[ U_{S_5} = U_{S_1} + U_{S_2} + U_{S_3} + U_{S_4}. \]
\[ U_{S_6} = U_{S_1} + U_{S_2}. \]
There are several interesting observations to be made from the regression equations of Tables XII-2 and XII-3.

1. While in a few cases the coefficients of the US terms are negative, in no such cases are the coefficients significant at the 95 percent level. Generally, then, the tables support the hypothesis that the greater the number of U.S. stations available, the greater the revenues accruing to the Canadian stations.

2. The coefficients of the US, terms are generally not significant at the 95 percent level of confidence in regressions using Re* (common coverage area population estimates) as the measure of audience but are generally significant when either V* (total viewing-hours) or P* (average prime-time audience) are used as the measure of audience size. At the same time, however, N (one plus the number of private television stations located in the market) is significant only when Re* is used as the measure of audience size. The lack of significance of the US, and the significance of N when Re* is used as the measure of audience size support the hypothesis that advertisers tend to buy potential coverage rather than actual coverage. It is certain that the number of U.S. stations available will in no way disturb the potential coverage of a station when this potential coverage is defined as population within the coverage area of the station. Parenthetically, this measure of potential, Re0, should be a good proxy for reach or net weekly circulation (Re) as used above. Therefore, given that advertisers seem to concentrate on potential coverage rather than actual coverage, and given that the number of U.S. stations does not disturb this potential coverage, a lack of statistical significance is associated with the number of U.S. stations available.

3. In the equations using Re* as an independent variable, N (one
Table XII-3. Estimation of the Financial Impact of American Stations upon

<table>
<thead>
<tr>
<th>Equation number</th>
<th>Dependent variable</th>
<th>Constant term</th>
<th>nRe*</th>
<th>nV*</th>
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plus the number of privately owned television stations located in the market) is statistically significant. Like $Re^*$, $N$ represents a potential, although of a different sort—the potential to advertise in the market (or, conversely, the capacity of the market to accept advertisements). The fact that the coefficient of $N$ is positive may indicate that the demand for advertising time to some extent follows the available supply—the greater supply of time available will stimulate demand. Alternatively, the observation may be due to an elastic demand for advertising time (the increased supply causing the price of advertising to fall, yet total revenues to all stations in the market when aggregated to rise). This latter explanation does not appear to be satisfactory, however, as all evidence seems to suggest that the demand for advertising time is price insensitive (that is, price inelastic). If, however, the demand for advertising time is to a large extent determined by the available supply, as many broadcasters and the CRTC appear to believe (see CRTC Public Announcement, 21 July 1972, CRTC 72-224, in which Global was licensed), total revenues normally will rise with the addition of a new station.

4. The coefficients of the $US_i$ are generally significant and positive when $V*$ or $A*$ replace $Re^*$ in the regressions. This observation supports the hypothesis being tested. These measures of actual audience alone are not sufficient to explain the total variation across stations in revenues. If two stations attract equal audiences in terms of viewing-hours (or average prime-time audience) but differ by the amount of competition they face in terms of the number of U.S. signals available, the station facing the greater competition will attain the larger revenues (as it must have a larger potential audience). The greater the number of U.S. stations available, the greater the fragmentation of the audience to these U.S. channels and, therefore, the less competitive those channels will be for advertising designed to reach the Canadian audience. In other words, the greater the number of U.S. channels available in the market, the lower is the potential for reaching the target market in the Canadian community through any single U.S. channel.

5. The lack of significance of the coefficient of $Q$ points to the unimportance of a market’s quality in terms of the level of retail sales and disposable income as a variable explaining station revenues.

6. It does not appear that the theoretical problem raised in chapter IX, that a declining marginal value of audience would lead to a decline in total advertising revenues as large stations gain audience from small stations, is of any importance in Canada. No evidence has been presented to confirm that the marginal value of audience in fact declines. Note that $V^{**}$ and $A^{**}$ are not significant and that $Re^{**}$, while highly signifi-
To summarize, both population coverage ($R_e^*$) alone, and actual viewing-hours plus the number of U.S. stations available ($V^* + US$), go further in explaining broadcast revenues than do viewing-hours alone; $US$ are positively associated with revenues. (If such were not the case, one would have observed a decline in the relative amount of television advertising expenditures through time with cable television growth.) These findings are attributable to the fact that advertisers purchase a predetermined amount of coverage in a market (as determined by the market's potential in terms of population or last year's sales) and specify the amount of funds required to ensure this coverage. As audiences are fragmented by the increased availability of U.S. signals through cable television, this predetermined amount of exposure becomes more difficult and expensive to attain with the result that revenues are observed to rise with audience fragmentation. The desired level of market exposure is determined primarily by population ($R_e^*$) or sales ($R_s^*$), and the increasing difficulty of attaining the desired level of exposure is reflected in the positive correlation of viewing-hours and the number of available U.S. signals, considered in combination, with broadcast revenues.

The hypothesis being tested gives another prediction that may be verified in a few years' time. Given that advertising budgets are determined exogenously (generally as a percentage of the total sales of a firm), and given that these funds are allocated among markets in order to attain a level of coverage based on each market's potential contribution to total sales (that is, by the market's population or last year's sales), and given that the desired level of coverage becomes more difficult and expensive to attain as audiences become more fragmented with the increased availability of alternate television channels, it appears likely that in order to protect coverage in the major markets ("the must buy" markets) funds will be transferred from minor markets to major markets.14

In order to further test the hypothesis that individual broadcasting stations will not suffer financial harm from the erosion of audiences to American stations so long as the Canadian station in question is able to retain the dominant position of reach in its own market, the Vancouver market is again studied.

14 An interview reported in Marketing magazine and interviews with advertisers, ad agencies, and broadcasters indicate that this prediction already is being felt due to the arrival of Global in southern Ontario. Early indications are that Global is not repatriating advertising dollars from U.S. stations to the coast, but rather is gaining the bulk of its advertising revenues at the expense of stations in the smaller Canadian markets, such as Brandon, Manitoba. Marketing, 26 November 1973, p. 20.
Given these remarks it is possible to again test the reach hypothesis. Were advertising revenues closely related to the size of the audience delivered by television stations, one would expect that advertising expenditures in Vancouver over the period 1969–1972 would be constant, after neutralizing for normal advertising growth and population increases, since the Canadian share of audience has remained constant at 46 percent. On the other hand, if advertising revenues are determined primarily by the reach of the dominant station in the market, one would expect that the decline of KVOS would repatriate advertising revenues to Canada in addition to normal advertising growth. Since KVOS has lost its dominant position in the market, it becomes a less attractive advertising vehicle to reach Vancouver residents. In addition, since British Columbia is the only Canadian province in which one American station has dominated the viewing time of residents, one would anticipate that advertising revenues per television home in British Columbia would be significantly less than such revenues in other provinces, but that the gap would be becoming smaller through time.

As Table XII-5 demonstrates, advertising revenues per television home in British Columbia historically have been substantially less than other areas in Canada (including much poorer areas), but the gap has been declining through time with the growth of cable television and the concomitant decline of KVOS. As the Davey report states:

The per household revenue of the private stations in British Columbia is only slightly more than half of the national average and much less than received in the other wealthy provinces of Ontario and Alberta.

It is persuasively argued that this sharp differential is explained by the fact that the revenue drained off from the province by KVOS-TV is excluded from the D.B.S. figures.

It has been suggested that, in fact, close to $6 million represents the actual amount of advertising revenue obtained by KVOS-TV in Bellingham (Washington).

It is impossible to explain the phenomena observed in Table XII-5 by an actual audience-revenue relationship.

The major policy conclusion that follows from the preceding analysis is that public policy should be directed toward ensuring that local Canadian stations are able to retain their predominate position of reach in their own markets. This may be accomplished in two ways: (1) a ban on the importation of American television signals and duplicate Canadian stations, or (2) the requirement that each U.S. alternate station imported by a cable system be accompanied by at least one duplicate U.S. channel.


The first proposal obviously would do away with the threat U.S. stations have on the Canadian broadcasting system, but in light of the CRTC’s early attempts at regulating the number of U.S. channels that may be carried on cable systems, this proposal does not appear to be politically realistic.

The second proposal rests on the finding that while U.S. alternate stations do have a substantial impact on a Canadian station’s audience size, duplicate U.S. stations have an insignificant effect. Therefore, when duplicate U.S. channels are carried on the cable, the audience attained by these stations primarily will come from other U.S. stations on the cable. This fragmentation of the audience to U.S. stations will reduce the reach of any given U.S. station without causing a further reduction in the reach of the local Canadian channel. On the other hand, when only one or a few U.S. channels are available on the cable, the U.S. channel normally will be expected to gain a large reach and thereby become an ideal medium with which to gain exposure to the local Canadian market, especially in view of the fact that 60 percent of all television advertising revenues in Canada come from U.S. multinational corporations that sell identical products in the United States and Canada. 16

In summary, the evidence in this section supports the hypothesis that the increased availability of U.S. channels helps rather than harms the Canadian broadcasting system, given current advertising practices and given the stage of development of cable television in Canada. These two "givens" form important qualifications with regard to public policy implications, however, and they are addressed below.

**SOME QUALIFICATIONS REGARDING THE IMPACT OF U.S. TELEVISION ON CANADIAN BROADCASTERS**

Were a cable television consultant attempting to show that CATV has had little or no deleterious impact on broadcasters, he could cite the evidence presented in this study and his case would be quite strong. In short summary, the following points are most important:

First, advertisers do not pay close attention to ratings and are more concerned with reach. CATV may cause the reach of a local station to decline but has not yet caused the local station to lose its position as the station with the greatest reach. Therefore, the local station remains the best buy for advertisers attempting to reach the population in the area.

Second, television continually has grown in relative importance vis-à-vis other media, offering proof that CATV has not adversely affected television's viability as an advertising medium. While television's growth has declined in recent years, this may be attributable to exogenous factors, such as the decline in the growth of new television households.

Third, broadcasters have been able to compensate for whatever effects their fragmented audiences may have had on revenues by offering package deals, producing more productive commercials, extending their coverage area through translators, and so forth.

Fourth, statistically, the number of U.S. channels is positively correlated to station revenues.

May one then be satisfied that broadcasting and CATV are quite well placed. Each of the points above will now be addressed.

1. While advertisers have thus far been content to rely upon reach, they are becoming more and more aware of its inadequacies. If rating surveys come to be undertaken as often as in the United States, average audience size will then become the most important measure determining advertising revenues and station revenues will deteriorate accordingly.

2. The effects of continuing cable growth may be just as harmful without more frequent audience surveys. In 1971 only 18 percent of television households were cable subscribers, but the industry has been experiencing a growth rate of over 30 percent per year. By 1973, 34 percent of Canadian households were served by cable. The CRTC has recently announced that CATV systems too far from the border to be able to bring in U.S. signals through conventional means may now do so with microwave. This all points to a very high cable penetration within a few years.

3. There may be a very high cable penetration within a few years. It clearly would be naive to believe that advertisers will not become increasingly concerned as audiences become more and more fragmented. In such an event advertising expenditures on Canadian television could not help but decline.

This process is likely to be accelerated with the advent of Global Television, the new Canadian television network that appeared in January 1974. Global is offering advertisers a guaranteed cost per thousand viewers whereby Global will compensate advertisers (in bonus advertisements) should the network fail to deliver the full audience promised. Specifically:

Advertisers booking contracts with Global Television before November 30th, 1973 will be protected at these CPM efficiencies for the life of the contract to a maximum of 52 weeks. Contracts booked after this date will be protected for the life of the contract or until August 25th, 1974 whichever occurs first.

Global acknowledges regular BBM reports as the final arbiter of efficiency in all cases and will make additional adjustments as may be required at the time BBM reports are published. Such adjustments are to be in the form of airtime only within the same broadcast year and delivering the required audience demographics. Such delivery will satisfy Global's Guarantee. Further, BBM reports, starting from March 1974, are the only basis on which a package may be reduced due to over delivery.17

In other words, Global is replacing reach or potential coverage with viewers or actual coverage. If the forces of competition among broadcasters soliciting advertising dollars commit other stations and networks to similar sales of audiences rather than time based on potential coverage, then cable television probably will have a severe negative impact on the revenues flowing to the broadcasting system.

Global also is conducting continuous surveys of audiences in order to verify its cost per thousand viewers week by week. If this example set by Global becomes more widespread throughout Canada, so that surveys come to be as frequent as in the United States, one can again expect that advertisers will come to rely more heavily upon actual viewing statistics (which, though still volatile, could be watched week by week with frequent surveys) and less upon reach (which, though stable, need
not be closely correlated with what the advertisers are really interested in purchasing).

Two consequences may emerge from more frequent surveys and the use by advertisers of viewers rather than reach in making advertising expenditures. First, as mentioned, the fragmentation of audiences by cable television will be reflected in declining revenues. Second, programming characteristics of Canadian television will come even more closely to resemble that of U.S. television. In the United States, given the frequency of rating surveys and the importance of cost per thousand viewers in terms of advertising revenues, individual programmes must stand on their own in terms of attracting audience. Programming in the United States is, in the main, dictated solely by the ratings, with the result that the major part of the programming schedule is bland, middle of the road, light entertainment fare attempting to garner the mass audience. Canadian television to date has not been under the same necessity since revenues have depended upon potential rather than actual audience, and revenues have been based on reach over a week rather than reach for a single programme.

In short summary, it is difficult to foresee many positive advantages to the advent of Global Television so far as the health of the broadcasting system is concerned.

2. While it is true that television has continued to capture a large share of the advertising pie in the face of mounting competition from stations imported by CATV, its rate of advance has been declining, and most observers feel that television's share has probably stabilized at about 12.5 percent of total advertising expenditures. This indicates that factors which led to television's rapid growth also have stabilized (increased effectiveness of commercials, increasing saturation of homes by television, the novelty of TV).

In fact, it may be persuasively argued that television will become a less effective advertising medium in the years ahead. So long as television depends upon mass advertising, it must deliver a mass audience. The prospects of television changing into a specialized medium financed by specialized advertising seem unlikely in view of Canada's small population, the scarcity of television channels, and the lower level of advertising relative to GNP in Canada than in the United States. As the audience size and reach of local stations continue to decline because of CATV, mass advertisers will find it necessary to advertise more often and on more stations in order to have the same impact on each given market. This is the same as saying that each advertising dollar spent will become less and less effective in inducing sales. This will probably cause a substantial shift away from television and into other media or simply less advertising altogether.

It will be recalled that multinational advertisers account for 60 percent of Canadian television advertising. Total viewing of American television in Canada accounted for only 19 percent of all viewing time in 1972. Evidence shows that when U.S. channels obtain a substantial portion of the audience in border cities (for example, Vancouver and Windsor) many multinational corporations decrease their advertising expenditures on the local stations. It seems quite likely if and when American television succeeds in obtaining a more substantial share of Canadian viewing time (perhaps 30-40 percent) there will be a substantial, permanent decline in television advertising in Canada. U.S. television undoubtedly will gain at least this percentage of total viewing time when CATV has become established in most of the cities and towns of Canada and when cable systems have obtained a penetration of 80 percent. It is also suspected that this decline in revenues may be quite sudden. It seems quite likely that at some point in the future, after cable television has approached its ultimate penetration of perhaps 80 percent of the Canadian population, American television itself may have the largest single reach, as Canadian reach will be fragmented among three English language and two French language networks. One should bear in mind that CTV and Global coverage will be extended to most parts of Canada thereby increasing the competition among Canadian broadcasters and further fragmenting the audience for Canadian television. A viewing share of 30 percent for U.S. television (based on the economic model) does not appear out of the question. In such a case, it may be deemed propitious by network advertisers, and especially by the multinational corporations, to abandon the Canadian broadcasting system altogether and rely on the system with the dominant reach (the U.S. system on which they are advertising in any case).

It should be added that it is unlikely that local advertising will take up the slack. Fragmentation of audiences makes local advertising much less effective on television than national advertising.

20. Stations that now compete against a strong U.S. television presence have not yet felt the full effects of such competition since such stations are often "tied-in" to network sales. Network sales have not yet suffered to a great extent, since only 19 percent of Canadian viewing-time is spent watching U.S. stations. However, any decline in network advertising caused by an increased viewing-share obtained by American channels because of CATV growth will remove this protection that such stations currently enjoy.

21. Given the rule-of-thumb policies of advertisers, and the tendency of competitors to follow each other in advertising expenditures, it is possible that a few initial decisions to the effect that network advertising is no longer worthwhile may start a chain reaction.

18. Programmes also are judged by the size of audience they attract that will spill over into the following programme.

19. A third difficulty, noted in footnote 14 of this chapter, the possible transfer of funds from stations located in major Canadian markets to Global, has been discussed.
3. Broadcasters currently are running out of "tricks." Only so many rebroadcasting stations can be built without fragmenting audiences as seriously as does CATV. The time constraint of the broadcast day means that only so many package deals can be offered. Broadcasters have told the author that in the past Canadian broadcasting had been inefficiently managed, but the arrival of CATV had caused broadcasters to tighten their belts and become much more efficient. Unfortunately, the belt-tightening also has reached a point at which further cut-backs will cause an audience decline through poorer performance.

4. While to date revenues to Canadian broadcasting stations have been positively correlated with the number of American stations available in the community, this positive association has resulted from the fact that, to the present, reach has been the key variable determining revenues. As noted, should reach be replaced by actual audience size, or should the increased availability of CTV and Global signals further fragment the Canadian audience, one can predict a significant negative correlation will be found between revenues and the number of U.S. signals.

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XIII Broadcasting Costs and Profitability

One cannot analyse CATV's impact on broadcasters in a vacuum. While CATV may have a substantial effect upon broadcast revenues in the future, one should investigate whether such possible reduction would simply result in lower monopoly profits with little effect on performance (or even improved performance through competition), or if it would make television broadcasting in Canada so unprofitable that programme quality would deteriorate.¹


Table XIII-1 shows the overall profitability of the Canadian television industry in 1972, and Table XIII-2 shows the profitability for stations by revenue group as found in the Statistics Canada data. Table XIII-3 presents estimates of 1972 revenues for the largest television stations.

The thirteen largest private television stations account for 70.3 percent of the total operating revenues and almost 68 percent of the total operating expenses of the privately owned sector of Canadian television; the top twenty stations account for 81 percent of the revenues and over 78 percent of total expenses; and the top twenty-nine stations for 89 percent of the revenues and almost 88 percent of the total expenses. The remaining twenty-seven stations account for only 11 percent of the revenues and 12 percent of the expenses.

Similarly, the thirteen largest, private television stations account for 80 percent of the net operating profits; the largest twenty for 86 percent of the profits; and the top twenty-nine stations for over 94 percent of the profits. The remaining twenty-seven stations share 6 percent of industry net operating profits. The smallest twelve stations had an average operating profit of $5,042 in 1972.

The Canadian broadcasting industry is highly concentrated, and the major broadcasting companies have used some of their substantial profits to expand their broadcast holdings and to acquire companies vertically related to broadcasting (such as cable television systems, music production companies, record companies, broadcast research and consulting firms, electronics manufacturing companies, radio and television production companies, and news gathering and distributing companies). In ad-

Table XIII-1. Operating Revenue and Expenses of the Television Broadcasting Industry, 1972

<table>
<thead>
<tr>
<th>Revenue group</th>
<th>Total operating revenue (percentage of total)</th>
<th>Total operating expenses (percentage of total)</th>
<th>Net profit before tax (percentage of total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $499,000</td>
<td>$3,999,231 (3.0)</td>
<td>$3,928,724 (3.8)</td>
<td>$60,507 (0.2)</td>
</tr>
<tr>
<td>$400,000 to $999,999</td>
<td>10,466,459 (8.1)</td>
<td>9,344,764 (8.7)</td>
<td>1,121,695 (8.5)</td>
</tr>
<tr>
<td>$1,000,000 to $1,499,999</td>
<td>11,106,057 (8.4)</td>
<td>8,799,089 (8.4)</td>
<td>2,307,968 (8.3)</td>
</tr>
<tr>
<td>$1,500,000 to $2,999,999</td>
<td>13,477,491 (10.2)</td>
<td>11,927,445 (11.4)</td>
<td>1,540,046 (5.5)</td>
</tr>
<tr>
<td>$3,000,000 and over</td>
<td>92,905,318 (70.3)</td>
<td>71,165,550 (67.8)</td>
<td>21,739,768 (21,178,234)</td>
</tr>
<tr>
<td>Total</td>
<td>132,094,526 (100.0)</td>
<td>104,976,292 (100.0)</td>
<td>27,118,234 (100.0)</td>
</tr>
</tbody>
</table>


Table XIII-3. Revenues of Major Television Broadcasting Stations, 1972

<table>
<thead>
<tr>
<th>Station</th>
<th>City</th>
<th>Firm</th>
<th>1972 revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFTM-TV</td>
<td>Montreal</td>
<td>Tel-Metropole</td>
<td>$17,700,000</td>
</tr>
<tr>
<td>CFTO-TV</td>
<td>Toronto</td>
<td>Baton</td>
<td>12,400,000</td>
</tr>
<tr>
<td>CHCH-TV</td>
<td>Hamilton</td>
<td>Selkirk</td>
<td>10,000,000</td>
</tr>
<tr>
<td>CFCF-TV</td>
<td>Montreal</td>
<td>Multiplex Access</td>
<td>7,900,000</td>
</tr>
<tr>
<td>CFRN-TV</td>
<td>Edmonton</td>
<td>Sunwapta</td>
<td>6,700,000</td>
</tr>
<tr>
<td>CHAN-CHEK-TV</td>
<td>Edmonton</td>
<td>B.C. Television</td>
<td>6,700,000</td>
</tr>
<tr>
<td>CJOR-TV</td>
<td>Ottawa</td>
<td>Bushnell</td>
<td>6,500,000</td>
</tr>
<tr>
<td>CFPL TV</td>
<td>London</td>
<td>London Free Press</td>
<td>6,000,000</td>
</tr>
<tr>
<td>CFCM/KMII-TV</td>
<td>Quebec</td>
<td>Tel Capitel</td>
<td>6,000,000</td>
</tr>
<tr>
<td>CKCO-TV</td>
<td>Kitchener</td>
<td>Electrobeam</td>
<td>5,500,000</td>
</tr>
<tr>
<td>CFCN-TV</td>
<td>Calgary</td>
<td>CFCN</td>
<td>3,800,000</td>
</tr>
<tr>
<td>CICU-TV</td>
<td>Halifas/Sydney</td>
<td>CHUM</td>
<td>3,500,000</td>
</tr>
<tr>
<td>CFAC/CIOC-TV</td>
<td>Calgary/Selkirk</td>
<td>3,000,000</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>$95,500,000</td>
</tr>
</tbody>
</table>

Source: A.E. Osler, Gendron, Ltd., Private Broadcasters in Canada, April 1974, p. 7. Note: The three major markets (Toronto/Hamilton, Montreal, and Vancouver) accounted for 40.1 percent of all private television revenues in 1972.

Operating revenue:
- Revenue (net) from sale of air time
- Local time sales
- National time sales
- Network time sales
- Total
- Other operating revenues
- Total operating revenue
- Parliamentary grant
- Total operating revenue and parliamentary grant
- Operating expenses
- Net operating profit

dition broadcasting companies have begun to diversify into unrelated areas (toy manufacturing companies, hockey teams, security systems, publications, telecommunications systems), and have diversified into other countries. The fact that the largest broadcasting operations are so profitable and that broadcasters appear to have used much of their substantial profits to acquire other holdings rather than to develop new programming should give the Canadian Radio-Television Commission some cause to reconsider its policy of protecting private broadcasters from competition without requiring that the excess funds thereby generated be allocated exclusively to programming rather than to diversification and growth. This question will be raised again in the concluding chapter of this book. The holdings of four large broadcasting companies are given in Appendix D.

There is, however, in spite of the profitability of large stations, a remarkably close relationship between revenues and expenses for privately owned television stations as demonstrated by the following regression run on a sample of fifty-one stations for 1972:

\[ E_t = -2.055 + 0.782 R_{t-2} + 0.533 \Delta R \]

(22.08) 

\[ R^2 = .98, \quad (\text{xt}1) \]

where

- \( E_t \) = expenses accruing to privately owned television station in thousands of dollars, 1972;
- \( R_{t-2} \) = total revenues accruing to station in thousands of dollars, 1970; and
- \( \Delta R \) = change in revenues in thousands of dollars between 1970 and 1972.

Eq. (XIII-1) shows that 98 percent of the variation in expenses of television stations in 1972 could be "explained" by revenues in 1972 and revenues lagged by two years.2 Of every additional dollar received in revenues in period \( t \) (1972), television broadcasters spent an estimated $0.533. Of each additional dollar of revenue received in period \( t-2 \) (1970), broadcasters spent $0.249 in period \( t \). This result could be interpreted in at least two ways. First, expenditures by broadcasters, for the most part, may be discretionary (that is, there are few fixed costs), and the broadcaster makes his expenditures after estimating revenue. This action could be interpreted as broadcasters striving for a target rate of return.

Second, broadcasters may be able to increase revenues (with a large degree of predictability) by increasing expenditures. This theory would hold that "quality" (or, at least, "attractiveness") of the broadcasters’ output is related directly to expenditures. This latter theory appears to be the one held by the CRTC, as most of that body's actions can be interpreted as attempting to maintain or increase broadcasters’ revenues.

In spite of the strikingly close relationship between revenues and expenses, the economies of scale in television are large. This is due to certain fixed costs involved in television broadcasting and, more importantly, to an insignificant marginal cost of reaching an additional viewer within the coverage area. Large stations, however, either by their own volition or due to the pressures of competition from U.S. and other Canadian stations, follow policies that yield a close cost-revenue relationship for both large and small stations. The Mass Media Report has shown that the fixed cost inputs fall in importance as circulation (revenues) grow.2 In contrast, "quality" cost variables (expenditures on films, tapes, and artists' fees) rise. It was found that such quality expenditures rise significantly for television stations above $1 million in annual revenues. It is these quality expenditures that cause total expenditures to rise at the same rate as revenues. It will be recalled that the largest twenty-nine private stations in Canada obtain revenues in excess of $1 million per year. The remaining twenty-seven of the Statistics Canada classification of stations seem to be unable to make significant amounts of such quality expenditures.

Programming costs account for 62 percent of the CBC's gross expenditures and 75 percent of the CTV's annual budget.3 The concerns regarding Canadian broadcasting stem from the inability of the telecasting stations to obtain revenues in excess of $1 million per year. This result could be interpreted as broadcasters striving for a target rate of return.

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vision industry to amortize these programme costs over a large number of viewers. In fact, as will be made apparent below, this causes a double squeeze on profits.

Table XIII-4 shows programming costs of the CBC by category, while Table XIII-5 gives programme costs of the CTV network. The prime-time entertainment programmes of Table XIII-5 plus "Untamed World" were co-produced in the United States or syndicated in the United States. On average, such programmes cost CTV $700,000 a year. In contrast, completely American programmes cost CTV around $235,000 a year for fifty-two hours of programming, or about 35 per cent of the cost of the "Canadian" co-productions. Were the above prime-time entertainment programmes produced solely in Canada, without syndication, they would cost CTV about $1 million per year. Therefore, U.S. programmes cost CTV roughly 25 per cent of the cost of producing "quality" Canadian programmes. It should be noted in passing that the American networks spend well over $200,000 an hour for a series of prime-time programmes.

Table XIII-5. Costs of All CTV Canadian Programmes, 1970-1971

<table>
<thead>
<tr>
<th>Programme type</th>
<th>Annual cost (for weekly hour of programming)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prime-time entertainment</td>
<td>$775,000</td>
</tr>
<tr>
<td>&quot;Nashville North&quot;</td>
<td></td>
</tr>
<tr>
<td>&quot;Barbara McNair&quot;</td>
<td></td>
</tr>
<tr>
<td>&quot;Fug and Whistle&quot;</td>
<td></td>
</tr>
<tr>
<td>Prime-time information</td>
<td>$1,071,000</td>
</tr>
<tr>
<td>&quot;Here Come the 70's&quot;</td>
<td>$856,000</td>
</tr>
<tr>
<td>&quot;The World&quot;</td>
<td>$468,000</td>
</tr>
<tr>
<td>&quot;Sports Beat '70&quot;</td>
<td>$520,000</td>
</tr>
<tr>
<td>Weekend afternoons</td>
<td></td>
</tr>
<tr>
<td>&quot;University Challenge&quot;</td>
<td>$364,000</td>
</tr>
<tr>
<td>&quot;Come Together&quot;</td>
<td>$322,000</td>
</tr>
<tr>
<td>&quot;Question Period&quot;</td>
<td>$177,000</td>
</tr>
</tbody>
</table>


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A CRTC staff economist has estimated that a programme in Canada could be produced at about one-half the cost of the same show in the United States due to lower labour costs, and, in addition, the Canadian scale of production can be cut without any real effect on the programme quality with the result that quality Canadian productions may cost $60,000 per hour. He further estimated that at least $30,000 per hour is necessary to obtain adequate ratings, but for top ratings, an expenditure of $50,000 to $75,000 per hour is necessary, and these are the typical total production costs of "Canadian" co-productions syndicated in the United States. Of this $50,000 to $75,000, the Canadian networks typically will contribute $10,000 (per hour).

In 1971 CTV charged roughly $28,000 per hour for advertisements on Canadian programmes, assuming ten one-minute spot announcements per hour with no discounts and not taking into account advertising commissions or allowing for unsold time. Of this $28,000, $20,000 was the realized income net of advertising agency expenses. For American programmes, CTV charged $35,000 per hour under the same assumptions, for a net income of perhaps $26,000. CTV spends, as pointed out earlier, 70-75 per cent of its revenues on programming, or a maximum of $14,000 per hour (70 per cent of $20,000). A CTV programme cost forecast for 1970-1971, a year in which Canadian content had risen somewhat, is shown in Table XIII-6.

It has been shown, then, that Canadian production of the American-type, light entertainment shows is impossible without foreign sales and American contributions to production costs. When such productions are undertaken with the purpose of foreign sales, Canadians can compete, but one may wish to question the usefulness of the exercise. Why should Canadian broadcasters concentrate on helping to make imitations of "Cannon" and "Maude" when they can have the real thing at such...
Table XIII-6. CTV Network Programme Cost Forecast, 1970–1971

<table>
<thead>
<tr>
<th>Total Hours</th>
<th>Hours in Prime Time</th>
<th>Total Cost</th>
<th>Cost per Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network sales time*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canadian, regular</td>
<td>518.5</td>
<td>209</td>
<td>$4,166,140</td>
</tr>
<tr>
<td>Canadian, specials</td>
<td>64.25</td>
<td>32.5</td>
<td>761,500</td>
</tr>
<tr>
<td>Canadian, national news</td>
<td>109.5</td>
<td>109.5</td>
<td>1,087,300</td>
</tr>
<tr>
<td>Non-Canadian, regular</td>
<td>603</td>
<td>417</td>
<td>2,321,050</td>
</tr>
<tr>
<td>Non-Canadian, special</td>
<td>39</td>
<td>35.5</td>
<td>76,000</td>
</tr>
<tr>
<td></td>
<td>1,334.25</td>
<td>803.5</td>
<td>$8,412,190</td>
</tr>
<tr>
<td>Station sales time*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canadian, regular</td>
<td>462.5</td>
<td>126</td>
<td>1,233,720</td>
</tr>
<tr>
<td>Canadian, specials</td>
<td>19</td>
<td>7.5</td>
<td>69,500</td>
</tr>
<tr>
<td>Non-Canadian, regular</td>
<td>418</td>
<td>287.5</td>
<td>1,685,220</td>
</tr>
<tr>
<td>Non-Canadian, special</td>
<td>5</td>
<td>5</td>
<td>5,000</td>
</tr>
<tr>
<td></td>
<td>904.5</td>
<td>326</td>
<td>$2,993,440</td>
</tr>
</tbody>
</table>

Source: Confidential.

* Excluding distribution costs of $1,176,000 in network time and $837,200 in station time.

As stated, the economics of programming works in a second way also. American programmes on Canadian television tend to attract the higher audiences. A BBM survey for 4 March–17 March 1974 showed that only six of the highest rated twenty-five programmes shown on the Canadian networks originated in Canada. Of these six programmes, hockey accounted for two. Table XIII-7 shows the average advertising revenues, direct costs, and profit margins for an average hour of programming from the United States, Great Britain, and Canada for such programmes shown on the CTV network. Substantial portions of the earnings on the Canadian programmes in Table XIII-7 are said to be the result of “force-packaging” with the American programmes carried on CTV. As it is, even with rate discounts of 20–28 percent from the rates charged for American programmes and “force-packaging,” the advertiser is forced to pay a higher rate per 1,000 for the Canadian shows.

Table XIII-7. Cost, Revenue, and Margin for Each Hour of Programming on CTV, by Country of Origin, 1971

<table>
<thead>
<tr>
<th>Country of origin</th>
<th>Average revenue</th>
<th>Average direct cost</th>
<th>Average margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>$22,000</td>
<td>$5,400</td>
<td>$16,600</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>16,900</td>
<td>5,400</td>
<td>11,500</td>
</tr>
<tr>
<td>Canada</td>
<td>16,800</td>
<td>14,500</td>
<td>2,300</td>
</tr>
</tbody>
</table>


(see Table XIII-8). The three American programmes in Table XIII-8 were the lowest rated of CTV’s U.S. shows.

It is apparent, then, that there is a vicious circle operative in the private sector of Canadian broadcasting:

Canadian programmes reach a smaller audience than American programmes, and so must be less costly.

Lower cost Canadian productions cannot compete for audiences with high cost American programmes.

Stations receive less advertising revenues for Canadian shows than their U.S. programmes.

Table XIII-8. Selected CTV Network Prime Time Programmes, Relationship between Revenues and Audience Levels, 1971

<table>
<thead>
<tr>
<th>Programme</th>
<th>Homes viewing (Nos. 1970) ('000)</th>
<th>1970-1971 revenues booked to 31 Jan, 1971 ($'000)</th>
<th>Average annual revenues per home delivered</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;Glen Campbell&quot;</td>
<td>710</td>
<td>873</td>
<td>$1.20</td>
</tr>
<tr>
<td>&quot;Andy Williams&quot;</td>
<td>689</td>
<td>897</td>
<td>1.00</td>
</tr>
<tr>
<td>&quot;Matt Lincoln&quot;</td>
<td>618</td>
<td>667</td>
<td>1.00</td>
</tr>
<tr>
<td>&quot;Untamed World&quot;</td>
<td>552</td>
<td>444</td>
<td>1.61</td>
</tr>
<tr>
<td>&quot;Barbra McNair&quot;</td>
<td>565</td>
<td>847</td>
<td>1.68</td>
</tr>
<tr>
<td>&quot;Nashville North&quot;</td>
<td>488</td>
<td>440</td>
<td>1.80</td>
</tr>
</tbody>
</table>

The CRTC has raised the Canadian content quotas for television, and so the cost-revenue differential between American and Canadian programmes may become more pronounced.

If networks attempt to cut back on expenses in producing Canadian programmes, audience will decline and so will revenues.

If stations attempt to raise the quality of Canadian programmes in order to raise revenues for these shows, costs will get even more out of line from prices charged by the Americans.

There are then, three basic alternatives for Canadian broadcasting:

1. to become simply relayers of American popular television, in which case audience and revenues undoubtedly will be the largest and costs the lowest;
2. to compete directly with the Americans by co-producing light entertainment shows at high cost for the international market and interspersing these programmes with low budget, light entertainment shows for home consumption alone; audiences and revenues will be somewhat lower than in case (1) and costs somewhat higher, and there will be little meaningful difference in the results on the television screen from case (1):
3. to face the fact that the Canadian audience is only one-tenth as great as the U.S. audience, and therefore production costs cannot be as great as in the United States; the correct strategy would be to programme for a distinctly Canadian audience and be rewarded according to the success the Canadian producers have in differentiating their products in this way.

There is little doubt in which direction the economics of broadcasting and the profit motive would push broadcasters were they free from regulation (case [1]). Under Canadian content quotas, with little supervision of programme types, regulation probably has directed the system into a combination of cases (1) and (2).

And into this conundrum enters CATV. No data are available at this time as to whether CATV, by bringing in otherwise unobtainable American stations, has its largest impact on the Canadian or on the American programmes carried by the Canadian networks. What CATV can do, however, is to lessen the profit margins of all private television, and this may be expected to cause a further decline in the expenditures upon Canadian programmes.

It will be recalled that the smallest twenty-seven television stations in Canada (that is, 48 percent of all private TV stations) account for only 6 percent of the industries' profit, averaging profits of $58,600 per year.

The smallest twelve stations average $5,042 per year in profits. The largest stations, however, tend to be highly profitable, as has been demonstrated previously.

One may lament the fact that the large revenue earners are not contributing a higher proportion of their government protected profits to programme production for the Canadian market alone rather than diversifying into other fields of endeavour. This criticism, however, in reality is a criticism of a policy that attempts to use private broadcasting to implement national policy. In recent years the feasibility of such an approach does not seem to have been questioned by policy makers; rather, it has been assumed that the greater the financial strength of the private sector of Canadian broadcasting, the greater their potential and willingness to help implement the national policy. Policy makers are undoubtedly correct as regards potential; willingness is another question.

There is one further cause for alarm stemming from increased competition from American stations. Harvey Levin states that competition in mass media (in Levin's case, competition among different media) may at some point become so severe as to make it impossible for the weaker groups to resist organized special interest groups and may force these media owners to reduce the standards of taste and culture. He states that financially weak enterprises are quite susceptible.11 In a similar vein another observer has spoken of a "cultural Gresham's Law," whereby the social products with the least social value receive the widest circulation.12 It has been shown above how economic pressure causes a cutback in broadcasters' pursuit of quality.

In addition, the economic theory of broadcasting has well established the fact that increased competition in private broadcasting under normal circumstances (that is, limited channels) will not promote diversity in programming but, rather, induce duplication.13 These factors should be kept in mind when reviewing the cable policy of the Canadian Radio-Television Commission.

13. See works cited in footnote 1 of this chapter.
Appendix D

Acquisitions and Profits of Four Broadcasting Chains

The Canadian broadcasting industry is quite concentrated, and the largest broadcasters own highly profitable operations. One may be able to analyse broadcasters' willingness to contribute to the national policy of "safeguarding, enriching and strengthening the cultural, political, social and economic fabric of Canada" by surveying the magnitude of the profits of the major broadcasters and by enquiring into the forms of their corporate growth. Should broadcast ventures be deemed highly profitable, and should corporate growth through the acquisition of companies in broadcasting and other areas be seen to be a major preoccupation of the major entities in the industry, then one might reasonably be quite critical of the degree of protection given broadcasters by the Canadian Radio-Television Commission in the absence of supervision of both profits and acquisitions. This appendix surveys the acquisitions and profits of four major broadcasting chains. No further editorial comment is made and the reader is left to form his own conclusions. 1

CHUM, Limited

From initial beginnings as a single radio station in Toronto, CHUM, Ltd. in the past ten years has undertaken an expansion programme. At present, the company owns 100 percent of CHUM-AM/FM in Toronto, CFRA-AM and CFMO-FM in Ottawa, CFUN-AM in Vancouver, CJCH-AM in Halifax, CKVR-TV in Barrie, and CFRW-AM/FM in Winnipeg. It holds majority interest in CKPT-AM, Peterborough, CJICH-TV in Halifax, CKCW-TV in Moncton and St. John, and CJCB-TV in Sydney. The three Maritime television stations have been organized to form the Atlantic Television Network (ATV).

CHUM, Ltd. owns four music production and publishing companies (including Much Productions, Summerlea Music, and Winterlea Music). It operates a news system which serves thirty-seven radio stations across Canada. It has expanded outside the broadcasting industry through the acquisition of Associated Broadcasting Corporation, which owns the "Muzak" franchise for Ontario, Vancouver, Victoria and Calgary, through 80 percent interest in Martin Goldfarb Consultant Company; through 90 percent interest in Fabric Toys, Limited; and through National Securities Systems, a company which sells and installs alarm systems. 2

Revenues, operating costs, and operating incomes for the CHUM, Ltd. holdings for 1973 are given in Table D-1.

Table D-1. CHUM, Ltd., Revenues, Costs, Profits, 1973

<table>
<thead>
<tr>
<th>Source</th>
<th>Revenues</th>
<th>Operating costs</th>
<th>Operating profits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CKVR-TV</td>
<td>$2,500,000</td>
<td>$2,400,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>ATV·Maritimes</td>
<td>6,000,000</td>
<td>4,530,000</td>
<td>1,470,000</td>
</tr>
<tr>
<td>CHUM-AM, FM</td>
<td>2,380,000</td>
<td>2,800,000</td>
<td>500,000</td>
</tr>
<tr>
<td>CFRA, CFMO</td>
<td>2,675,000</td>
<td>1,600,000</td>
<td>1,075,000</td>
</tr>
<tr>
<td>CJICH-TV</td>
<td>850,000</td>
<td>650,000</td>
<td>200,000</td>
</tr>
<tr>
<td>CFUN-AM</td>
<td>590,000</td>
<td>600,000</td>
<td>100,000</td>
</tr>
<tr>
<td>CJCH-AM</td>
<td>200,000</td>
<td>175,000</td>
<td>25,000</td>
</tr>
<tr>
<td>CFRW-AM/FM</td>
<td>700,000</td>
<td>600,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Other</td>
<td>3,200,000</td>
<td>2,475,000</td>
<td>725,000</td>
</tr>
<tr>
<td>Total</td>
<td>$21,955,000</td>
<td>$15,850,000</td>
<td>$6,105,000</td>
</tr>
</tbody>
</table>


MACLEAN-HUNTER, Limited

The company's broadcast holdings, all acquired since 1966, include CFCN-TV, Calgary; Shoreacres Broadcasting Company (CKEY-AM, Toronto); Great Lakes Broadcasting (CHYM-AM, Kitchener); and the Voice of the Prairies, Limited (CFCN-AM). In 1967 Maclean-Hunter organized Maclean-Hunter Cable TV to acquire and develop cable systems in Ontario. M.H. Cable has purchased ownership in ten cable television systems in southern Ontario, has acquired controlling interest in three other cable systems in Ontario, has acquired controlling interest in three other cable systems in Ontario.

2. Martin Goldfarb Consultants authored Volume II of the Special Senate Committee on the Mass Media's publication Mass Media and provided the research for the Senate Committee.

systems in southern Ontario, and has built systems in Toronto and Mississauga.

Maclean-Hunter Cable is engaged in cable television technology through Phasecom Corporation (U.S.), and in mobile radio communications through Air Tel, Ltd. (Maclean-Hunter Communications).

Maclean-Hunter is Canada's largest publisher, whose publications include five consumer-oriented magazines (Miss Chatelaine, French and English editions of Chatelaine and Maclean's), seventy-five business and trade magazines and annuals. It owns a book publishing company (Macmillan), operates newstands, and distributes published materials (Maclean-Hunter Distributing Company; Metro Toronto News Company, Ltd.). Outside Canada, the company owns two subsidiaries in the United States, one in the United Kingdom, and three in continental Europe, all engaged in publishing related activities. Revenues for Maclean-Hunter in 1972 totalled $29.6 million; 44 percent from publishing, 10 percent from broadcasting, 10 percent from cable television.¹

WESTERN BROADCASTING COMPANY, Limited

Beginning in 1965 with the acquisition of two Vancouver radio stations, Western has pursued an aggressive acquisition policy including CIOR-AM/FM, Winnipeg; CHQR-AM, Calgary; and CHML and CKDS, Hamilton; 44 percent interest in British Columbia Television Broadcasting Systems (CHAN-TV, CHEK-TV); and majority interest in Bushnell Communication, Ltd. (CJFH-TV, Ottawa; Skyline Cablevision, Laurentian Cablevision). It also has acquired Express Cable Television in Vancouver and minority ownership of Okanagan Valley Television, Ltd. Through a wholly owned subsidiary, Western Productions, Ltd., Western is engaged in a variety of radio productions including commercials and sound recordings. Other investments include an $8.4 million investment in Northwest Sports Enterprises, Ltd. (the Vancouver Canucks hockey team), representing 70 percent ownership. In 1972 Western had revenues of $6.3 million.²

SELKIRK HOLDINGS, Limited

Selkirk owns CHCH-TV, Hamilton; CFAC-TV, Calgary; CIOC-TV, Lethbridge; and has 41 percent interest in CHAN-TV, Vancouver and CHEK-TV, Victoria. Selkirk operates radio stations in Vancouver (CKWX); Calgary (CFAC); Edmonton (CJCA-AM/FM); Victoria (CJIV); Lethbridge (CJOC); Blairmore (CJPR); Vernon (CHIB); and Grand Prairie (CFGP).

Selkirk owns All Canada Radio and Television, the largest broadcast, sales representative house in Canada and is setting up a similar operation in the United States through Selcom.

The company has 22 percent interest in London Broadcasting in the United Kingdom, a commercial radio operation. Selkirk has 96 percent interest in Quality Records, a manufacturer and distributor of phonograph records, tapes, and cassettes. Selkirk has 50 percent interest in Greater Winnipeg Cablevision, Ltd. and a 35 percent interest in Ottawa Cablevision, Ltd.³

Revenues, costs, and profits for 1973 for Selkirk's holdings are given in Table D-2.

<table>
<thead>
<tr>
<th>Holding</th>
<th>Revenues</th>
<th>Operating costs</th>
<th>Operating profits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHCH-TV</td>
<td>$11,440,000</td>
<td>$7,550,000</td>
<td>$3,890,000</td>
</tr>
<tr>
<td>CFAC-TV, CIOC-TV</td>
<td>3,130,000</td>
<td>2,850,000</td>
<td>280,000</td>
</tr>
<tr>
<td>CKWX-AM</td>
<td>1,550,000</td>
<td>1,300,000</td>
<td>250,000</td>
</tr>
<tr>
<td>CFAC-AM</td>
<td>1,350,000</td>
<td>750,000</td>
<td>600,000</td>
</tr>
<tr>
<td>CICA-AM/FM</td>
<td>1,500,000</td>
<td>850,000</td>
<td>650,000</td>
</tr>
<tr>
<td>CIJE/AM</td>
<td>810,000</td>
<td>550,000</td>
<td>260,000</td>
</tr>
<tr>
<td>CJPR/CIOC-AM</td>
<td>470,000</td>
<td>300,000</td>
<td>170,000</td>
</tr>
<tr>
<td>CJIB-AM</td>
<td>348,000</td>
<td>175,000</td>
<td>73,000</td>
</tr>
<tr>
<td>CFGP-AM</td>
<td>120,000</td>
<td>100,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Other</td>
<td>3,682,000</td>
<td>2,799,000</td>
<td>882,000</td>
</tr>
<tr>
<td>Total</td>
<td>$24,330,000</td>
<td>$17,164,000</td>
<td>$7,166,000</td>
</tr>
</tbody>
</table>

SOURCE: Brault, Guy and Chaput, Inc., The Outlook for the Canadian Broadcasting Industry, July 1974, p. 34.

¹ Bankers Securities Ltd., The Communications Industry, pp. 36-37.
² Ibid. In 1972 the CRTC ordered Western to dispose of its interest in Bushnell, which, at this writing, it has yet to accomplish. Toronto Globe and Mail, 24 October 1974.
XIV An Appraisal of CRTC Cable Policy

A REVIEW OF CRTC POLICY

The 1968 Broadcasting Act created the Canadian Radio-Television Commission, which was declared to be "a single independent public authority" charged with "the regulation and supervision of the Canadian broadcasting system ... with a view to implementing the broadcasting policy enunciated in section 3 of [the] Act."1

Section 3 of the act lists the broad objectives of broadcasting in Canada, the most important of which follow.

Section 3(a). Broadcasting undertakings in Canada make use of radio frequencies that are public property and such undertakings constitute a single system, herein referred to as the Canadian broadcasting system, comprising public and private elements.

Section 3(b). The Canadian broadcasting system should be effectively owned and controlled by Canadians so as to safeguard, enrich and strengthen the cultural, political, social and economic fabric of Canada.

Section 3(d). . . . the programming provided by each broadcaster should be of high standard, using predominately Canadian creative and other resources.

Section (f). There should be provided, through a corporation established by Parliament for the purpose, a national broadcasting service that is predominantly Canadian in content and character.


Section (g). The national broadcasting service should contribute to the development of national unity and provide for a continuing expression of Canadian identity.2

Under the act, the commission has the power to issue and revoke broadcast licences and to make regulations respecting the character and amount of advertising, the standards of programmes, and the allocation of broadcasting time; such orders shall be made by the CRTC and such undertakings include "broadcasting transmitting undertaking[s]," "broadcasting receiving undertaking[s]," and "network operation[s]."

2. While the Broadcasting Act states that "broadcasting undertakings in Canada make use of radio frequencies that are public property," and while the CRTC has stated "The fundamental principle declared in the broadcasting policy for Canada [is] that radio frequencies are public property and broadcasting undertakings ... make use of these public frequencies under licences issued to them by the Canadian Radio-Television Commission on behalf of the people of Canada" (CRTC, Radio Frequencies Act Public Property, 31 March 1974), the reader should not (appropriately) take these declarations at face value. In fact, the CRTC either has created or is enforcing previously created private proprietary rights in the radio spectrum. A discussion of the basis for these marks follows.

Moncton Broadcasting, Ltd., licensee of CKCW-TV (the CTV affiliate in Moncton, N.B.), was licensed to provide CBC service to northeastern New Brunswick via three repeater stations. Viewers located in northeastern N.B. did not, however, receive a full complement of CBC service, as Moncton Broadcasting used these transmitters to distribute CTV programming in addition to partial CBC service. As these licences were to expire on 30 September 1974, New Brunswick Broadcasting Co., Ltd., licensee of CHSJ-TV (the CBC affiliate in Saint John, N.B. with a repeater in Moncton), applied to the CRTC to take over two of the frequencies used by Moncton Broadcasting in northeastern N.B., promising to provide full CBC service plus regional programming specifically to that area. Apparently New Brunswick Broadcasting applied in the belief that "radio frequencies are public property" and that, upon expiration of a given licence, should the public interest so dictate, the right to use a particular frequency would be freely transferable.

The CRTC accepted the arguments of New Brunswick Broadcasting Co. that the public interest would be better served by a CHSJ-TV takeover of the frequencies, but only under the following conditions: (1) CKCW-TV was to construct new rebroadcasters to provide CTV service to northeastern N.B. (2) CHSJ-TV was required to compensate CKCW-TV both for the lost frequencies and for the costs CKCW-TV would incur by constructing new CTV transmitters. Specifically: "The Commission is not satisfied that it is necessary or desirable in the public interest that a channel licensed to a private broadcaster be appropriated without compensatory arrangements. . . . Channels 12 and 7 have been licensed to Moncton Broadcasting Limited for many years and that [the] company has a considerable investment in and identification with these channels. . . . Moncton Broadcasting Limited is entitled to fair compensation for being deprived of the use of channels 12 and 7 and . . . such compensation is for the use of and to be borne by Moncton Broadcasting Limited to establish rebroadcasting stations of CKCW-TV." (Emphasis added) CRTC, Public Announcement, 27 September 1974; Decision 74-349 and 74-350.

As a sidelight to this decision it can be pointed out that much of the compensatory payment to be received from New Brunswick Broadcasting to Moncton Broadcasting Limited will be borne by the Canadian taxpayer, as the CBC itself has agreed to subsidize CHSJ-TV in this regard to a maximum extent of $0.5 million. In effect, the CBC is being required to subsidize the extension of CTV service due to the declaration of private property rights in the radio spectrum! A further interesting observation relating to this decision is that both of the private stations involved are subsidiaries of the same company, CHUM, Ltd.
In the above, CATV is classified as a "broadcasting receiving undertak­
ing" and as such is subject to the act's preamble section 3.

This section (b) which probably allows the CRTC almost unlimited discretionary power in the regulation of broadcasting undertakings. This section states: "Where any conflict arises between the objectives of the national broadcasting service and the inter­ests of the private element of the Canadian broadcasting system, it shall be resolved in the public interest but paramount consideration shall be given to the objectives of the national broadcasting service."

It has been said that Canadians traditionally have been worried about two things—first, the domination of the economy and culture by Ameri­cans, and second, the fear that someone will try to do something about it. In its brief history of cable regulation, the CRTC has become well aware of both concerns.

In its regulation of CATV, the CRTC has been concerned with two closely related yet philosophically diverse problems. During the first two years of the development of cable policy, the CRTC believed that both problems, which are noted below, could be treated with the same policy pronouncements, but evidence has been presented in preceding chapters to show that such may not be the case. The first problem is the protec­tion of broadcasters and the preservation of the over-the-air broadcast­ing system in the face of U.S. competition. The second problem is to minimize the inroads of "American cultural imperialism" caused by the growing availability of U.S. television in Canada. The policies used by the CRTC in attempting to solve both problems simultaneously involved limiting the number of U.S. channels that CATV systems could carry. However, such policy did not contribute to the solution of either prob­lem and, in regard to the first, may even have been perverse.

Canadians long have cherished the idea of their own, distinctive broadcast­ing system. The popular outcry against restrictive CRTC ca­ble policy doubtless stemmed, therefore, from one of the following hy­potheses: (a) Canadians did not believe that broadcasters were in finan­cial trouble owing to CATV. If they had believed CATV could cause a deterioration of Canadian broadcasting service, they might have been more receptive to CRTC policy. (b) Canadians did not feel a threat to their cultural heritage existed from the availability of U.S. signals. (c) Even if Canadians felt that U.S. television could make them less "Cana­dian," it was felt that it was up to the individual rather than an indepen­dent governmental regulatory agency to make the choice as to whether to undertake this risk by watching U.S. television.

Due to public pressure the CRTC was forced to modify its restrictive stand on cable television and develop a new ethic for cable policy. Outlined below is a short summary of the history of CRTC cable regu­lation beginning with the first public policy statement released on 13 May 1969.

Public Announcement, 13 May 1969: "Community Antenna Televi­sion"

The commission announced an order of precedence of channels to be carried by CATV systems, which was: (1) CBC French and English networks, (2) private Canadian networks, (3) independent Canadian stations, (4) local and educational programming (that is, cablecast­ing), (5) non-Canadian television stations, and (6) duplicate channels. With regard to (4) the commission stated that "CATV local program­ming should complement, rather than compete with, programming al­ready available to the community through television and commercial movie houses." In addition there was to be no alteration of the program­ming received from broadcasting stations, and cable systems were not to be allowed to carry their own commercials. The commission indicated it would not consider licences that would result in over-wiring and would not approve large networks of CATV systems. The CRTC further stated that it would pay close attention to rates charged, and approval by the commission had to be obtained before rate adjustments could be made.

Public Announcement, 10 July 1969: "On the Licensing of Cable Television Systems"

The commission indicated its preference for a fragmented cable in­dustiy feeling that it "would serve the public interest better to leave room for a larger number of persons and companies to play a role in this type of enterprise... In this regard, the Commission has tried, as far as possible, to relate natural and community boundaries with CATV system boundaries. The Commission has, whenever possible, also fa­voured local ownership."

Public Announcement, 3 December 1969: "Licensing Policy in Relation to Common Carriers"

The commission announced that only in exceptional cases would common carriers be allowed to hold CATV licences.

Public Announcement, 3 December 1969: "The Improvement and De­velopment of Canadian Broadcasting and the Extension of U.S. Televi­sion Coverage in Canada by CATV"
In this announcement the commission expressed for the first time its concern over the adverse impact that CATV could have on broadcasters:

The problem facing the Commission is not whether the technology of microwave should be used to help the development of cable television. It is to decide whether the use of additional techniques should be authorized to enlarge the coverage area of U.S. networks and U.S. stations and therefore their advertising markets in Canada.

The rapid acceleration of such a process throughout Canada would represent the most serious threat to Canadian broadcasting since 1932 before Parliament decided to vote the first Broadcasting Act. In the opinion of the Commission, it could disrupt the Canadian broadcasting system within a few years.

The fact that through force of circumstances many U.S. stations now cover other parts of Canada, and that some them seem to have been established mainly to reach Canadian audiences does not justify a decision of the Commission which would further accelerate this process.

In consequence the Commission will not license broadcasting receiving undertakings (CATV) based on the use of microwave or other technical systems, for the wholesale importation of programs from distant U.S. stations and thereby the enlargement of the Canadian audience and market areas of U.S. networks or stations.

However, the Commission feels strongly that no part of the Canadian population should be penalized in order to preserve a theory or to protect vested interests: either financial interests of investors in private broadcasting or privileges accumulated by particular groups in public broadcasting. The Canadian broadcasting system is worth safeguarding only if it provides the Canadian population with essential services which could not be provided otherwise. It would not make sense to protect a Canadian system based essentially on the retailing of programs "using predominantly non-Canadian material" to the best material available from other countries. Any broadcasting system must remain constantly open to ideas coming from other parts of the world. Nevertheless the efforts of Canadians to maintain an independent broadcasting system can and must express the originality of Canada and Canadians. (Italics added.)

With this announcement the commission offered broadcasters a carrot while threatening them with the stick. The ban on microwave meant broadcasters had a good deal of uncertainty removed and would thus be able to plan well into the future. In practice, this meant many stations would not have to face CATV competition at all (especially stations in the Maritimes, the Prairies, Northern Ontario, and Northern British Columbia), since CATV does not appear to be viable without U.S. signals.

At the same time the CRTC hinted that if Canadian television did not respond, at some future date it might throw broadcasting open to market forces. The commission indicated that it did not intend to provide over a war between private broadcasters and cable companies as to who had the right to import American television programmes.

And throughout the announcement was a continuation of the theme that had been established in the Aird Report in 1929 and confirmed with each successive study on broadcasting, that Canadian broadcasting was more than a mere entertainment medium. If that were all it was, perhaps U.S. incursions would not be undesirable. But, as a medium charged with strengthening unity, culture, and education, it must remain Canadian.

Public Announcement, 12 February 1970: "Proposed Amendments to the Radio (TV) Broadcasting Regulations"

Consistent with its 3 December announcement, and in an effort to force broadcasters to develop a distinctly Canadian television industry, the CRTC declared that a maximum of 40 percent of the broadcast time could be devoted to non-Canadian programmes, with the programmes from any one country not to exceed 30 percent of the broadcast day. The same Canadian content requirements were to be in force between the hours of 6:30 P.M. to 11:30 P.M., as well as the broadcast day as a whole. For private broadcasters, the full minimum content requirements were to be reached by 1 September 1971, while the CBC was to reach this minimum by 1 September 1970.

In response to these new regulations, the CTV network commissioned the Woods, Gordon study, which showed that each hour of Canadian programming would reduce revenues and raise expenses. As will be seen shortly, this study caused the CRTC to backtrack somewhat.

Public Announcement, 10 April 1970: "Guidelines for Applicants Regarding Licences to Carry on CATV Undertakings"

6 A Nesbitt-Thompson study estimated that each such hour would reduce hourly revenues by 20 percent while costs would rise by 200 percent. Nesbitt-Thompson and Co. Ltd., The Broadcasting and Entertainment Industry, Review and Outlook, Toronto, 1970, p. ii.
The commission termed this announcement as only "a guide to applicants for licences, amendments to licences and renewals of licences to carry on CATV undertakings," whereas the announcement on 13 May 1969 was called "policy by which it [the CRTC] will be governed in supervising this sector of the Canadian broadcasting system." It would appear that the CRTC was becoming more aware of the complexities of the cable problem and the difficulties of regulating broadcasting.

With this announcement, the CRTC proposed the following guidelines:

a) In granting a licence, the CRTC could require that the number of channels to be carried on the CATV system be reduced.

b) The commission issued a new list of priorities for determining the channels to be carried by CATV systems, either with a local head-end or distant head-end connected to the distribution system by microwave, which was: (1) CBC network service; (2) Canadian private network service; (3) Canadian B contour stations; (4) channel for community programmes; (5) Canadian stations with significantly different programme schedules from those stations in categories (1) and (3), such stations to be determined by the commission; (6) one non-Canadian commercial station; and (7) one non-Canadian noncommercial station.

c) The commission stated it might authorize a CATV system operating with a local head-end to carry programmes from more than one non-Canadian commercial station.

d) The non-Canadian programmes broadcast by Canadian broadcasting stations carried by the CATV system were not to be duplicated on the CATV system either simultaneously or within seven days of broadcast on the Canadian station.

e) CATV systems had to provide one channel for the distribution of educational television programmes, and in certain areas a second local programme channel had to be used for broadcasting in the second official language of the area.

f) Advertising of a type prohibited by Canadian law was not to be carried.

g) CATV networks might be authorized if the commission felt such were in the public interest.

h) "Applicants should bear in mind that if a TV station solicits Canadian advertising outside of his market or licensed area so as to disrupt the economic balance established by the normal licensing practice, the Commission may refuse to authorize the distribution of its programs by a CATV system."

In explaining its guidelines, the CRTC stated: "The Commission has been facing a dual responsibility concerning the orderly development of the broadcasting system. On the one hand, it must encourage the orderly development of the broadcasting receiving undertakings, and on the other, it must guard against the disruption of the existing system. The responsibility then is to ensure a development of CATV that is a complement to the present system, rather than competition for it."

Thus the CRTC attempted to foster CATV development by sanctioning microwave for areas in which U.S. signals were unobtainable otherwise, and to protect the over-the-air broadcasters by restricting such signals to two in number, only one of which was to be a commercial station.

However, cable operators and the general public objected vociferously, sensing that all CATV systems might be restricted to one U.S. commercial channel, even in areas in which several such signals were available off-air. One would suspect that the CRTC realized that such a regulation was politically impossible; however, the threat did exist in the announcement.

The other point worth noting in the guidelines is that the CRTC was attempting to fill the cable spectrum with all types of Canadian channels, including Canadian duplicates.

Public Announcement, 20 May 1970: "Decision CRTC 70-99"

The commission extended its deadline for the Canadian content requirements until 1 October 1972 for private broadcasters, with interim content requirements somewhat lower.

Public Announcement, 26 February 1971: "The Integration of Cable Television in the Canadian Broadcasting System"

Again, the commission reiterated its duty of protecting the broadcasting system, which it confirmed as the central nervous system of the nation, and re-expressed its apprehensions regarding CATV:

In raising these issues the Commission emphasizes that the purpose is not to safeguard vested interests or maintain a technology that would have outlived its usefulness. The purpose and mandate of the Commission is to uphold the public interest and to safeguard the system, which, in the considered opinion of the Commission provides the best service for the largest number of Canadians.

If a solution is not found to integrate cable into the overall system, the impact, by fracturing the economic basis of the private broadcasters would . . . disrupt the Canadian cultural, educational and informational imperatives of both the public and private sectors of the Canadian broadcasting system.

At stake is more than a system of national communications, because broadcasting also has the vitally important task of identifying and strengthening cultural entities, regional identities and community loyalties.

Having stated the above, the commission then completely repudiated its own guidelines in the 10 April announcement by saying that "although some measure of direction (given by the CRTC in regard to the amount and speed of cable growth) may be inevitable, the Commission is of the opinion that it would be much better for the viewers and for the Canadian broadcasting system if restrictive measures could be avoided."

With this, the commission stated its overall CATV philosophy as attempting "to develop a policy which would integrate cable television into the Canadian broadcasting system, avoid disrupting the system, enhance the capacity of the system to produce programs, and finally permit a vigorous development of cable television and of the whole Canadian broadcasting system."

The CRTC then listed a variety of means by which the cable industry might be integrated into the broadcasting system and requested comments and briefs on these methods. The ways of achieving this included: common ownership of broadcasting and CATV; mutual support without common ownership through compensation paid by cable operators to broadcasters; licensing of existing broadcasters to install new transmitters which would carry the U.S. networks; reliance on cable for entire carriage of all programme services to all homes—the wired nation concept; black-out duplication of programmes from distant stations; and requiring that cable operators delete the commercials from U.S. television and possibly replace them by Canadian commercials.

From the above it is evident that the CRTC had doubts about its plan of limiting the number of U.S. channels on cable by outright fiat. The concept existed in the document, however, under the possible use of a sliding disincentive—cable operators would pay more for each additional U.S. channel carried.

Due to political pressures and public resentment the CRTC, then, was shifting from a protectionist stance to that of a system planner.


In the final major CATV policy announcement, the commission revised its list of priority channels to be carried by CATV: (1) all Canadian grade-A contour stations—"(local stations")"; (2) all Canadian grade-B contour stations, except for private affiliates forming part of the same Canadian network as a local station—"(regional stations")"; (3) if available, a CBC owned and operated station must be carried, even if not included in priorities (1) and (2); (4) any Canadian station whose grade-B contour does not cover the licensed area and which is not affiliated to the same network as the local or regional stations—"(distant stations")"; and (5) all other stations are optional "and may be carried if all basic services are provided for."

This list of priorities differs chiefly in two ways from the priority list of the 10 April 1970 announcement. First, CATV systems are now required to carry a Canadian grade-B contour station only when such stations differ in their network affiliation from the local stations, whereas previously all grade-B stations were to be carried. Second, once the minimum of Canadian channels is carried on the system, the CATV operator has freedom in filling out the balance of the capacity of his cable system. This is in contrast with the previous announcement which threatened to limit American channels to one commercial and one non-commercial station.

The CRTC reiterated its desire that cable systems programme directly for the communities in which they are located. Some limited amount of cable networking was to be allowed when this did not substantially inhibit the local character of the cablecasting channel.

The commission announced its plan for the compensation of broadcasters by cable operators. In the broadcasting-CATV relationship, there are two types of externalities. The negative externality arises from the fact that cable operators damage the revenues (or may damage revenues at some future date) of broadcasters through the use of broadcast signals. The positive externality arises from the fact that broadcast signals are free goods, and CATV companies are able to trap, improve, and resell them. It was this second (positive) externality that the CRTC emphasized in giving the rationale for its compensation plan. To weigh all costs and benefits rationally, however, both types of externality should be taken into account.

The commission urged broadcasters and cable operators to negotiate a workable plan for compensation. The CRTC suggested a plan whereby the amount of compensation would be determined by a formula based on revenues, the percentage of revenues to be paid broadcasters to increase with revenues. In return, CATV operators would have permission to replay programmes on their systems that already had been aired by the broadcasters. CATV operators also could use some of these predetermined funds to purchase programmes from other sources, such as the National Film Board.

The commission stated that total compensation from this plan could have reached $2 million for the year ended August 1970 and might
amount to S4 million for the year ended August 1972. It further added that of the total advertising revenue received by stations (as opposed to networks), only 25 percent is available for programming after meeting other expenses. The CRTC felt that most of this new payment could be used for programme production.

By replaying programmes on CATV systems with the original advertisements intact, the commission felt that Canadian programmes would become more attractive to advertisers. The purchase and replay of such programmes additionally would attract new subscribers to the cable systems, thereby raising revenues, a portion of which would find its way into the broadcasting system. Such a plan also would stop the economic waste of using programme material only once.

In an effort to remove the deleterious effects of audience fragmentation through the reception of duplicate channels, the CRTC stated that all CATV systems with over 3,000 subscribers and more than 40 subscribers per mile of plant should be prepared, as of 1 September 1972, to respond to the request by a high priority station to delete the transmission of any lower priority station or optional station during any period for which these stations duplicate the programming of the higher priority station. The cable system then could elect to substitute the transmissions of the higher priority station into the otherwise vacant channel during the period of duplication.

The commission withdrew its requirement that signals should be unaltered by CATV. Instead it opened up the opportunity for cable systems to insert replacement advertisements into the times occupied by advertisements on American stations, such substitute advertisements being sold by Canadian television stations. The CRTC deemed the total deletion of advertisements on U.S. channels to be too expensive for the cable operators, and instead allowed this option. Such policy, the commission added, would not lessen in any way the variety of programme fare available to cable subscribers.

Finally, the CRTC relaxed its policy on microwave. It stated it would authorize cable systems to import up to three U.S. commercial signals by microwave, if local stations would not suffer, and any number of domestic Canadian signals. In practice, it felt, the use of microwave would be limited by the high costs involved.

8. Reference should be made at this point to Chapter IV in which the estimated yearly surplus from Winnipeg cable television alone was estimated to be $2 million per year by 1978. In a separate study undertaken by the author for the Department of Communications, it was estimated that the total surplus (after allowing for a 16 percent return before tax on net investment) for the top forty-five cable systems in Canada would be $50 million in 1976.

Public Announcements, 3 August 1973, 1 March 1974, 1 May 1974

Through a series of decisions regarding specific cable applications (of which only three are brought forth as examples) the commission has attempted to implement its 16 July 1971 cable policy and to expand upon it.

1. Applicants for new cable licences are now sometimes offering to compensate local broadcasters with a proportion of subscription revenues. These payments become a condition of the cable licence. For example:

In its application, the licensee [B. Torchinsky, on behalf of a company to be incorporated to serve Kamloops, B.C.] undertook to make a compensation payment to Inland (licensee of a broadcasting station serving Kamloops) a condition of the licence that the licensee carry out its commitment to respond to the request by a high priority station to delete the transmission of any lower priority station or optional station during any period for which these stations duplicate the programming of the higher priority station. The cable system then could elect to substitute the transmissions of the higher priority station into the otherwise vacant channel during the period of duplication.

The commission appears to be creating "gateways" for the importation of American television signals such that the facilities required for commercial substitution and deletion are located at the distant head-end, and the adjusted signals microwave to the local head-ends of numerous cable systems, all of which share the costs of the distant head-end facilities and microwave charges. For example, twelve cable television licencees serving parts of Nova Scotia and New Brunswick shall:

share in the ownership of the distant "head-end or receiving antenna construction at Chamcook, N.S. . . . The joint owners of the Chamcook head-end shall have facilities constructed for the deletion of commercial messages from television signals received from broadcasting stations not licensed to serve Canada and commercial messages contained in television signals received from broadcasting stations not licensed to serve Canada shall be deleted before such signals are distributed from Chamcook to any licensee in the Maritimes.

Wherever simultaneous programming occurs, the cable television licencees shall delete distant signals and substitute for them the programs transmitted.
3. The commission is still attempting to limit the number of U.S. signals carried by CATV systems in specific cases: "The Commission approves the carriage of the following television stations by the licensee: (a) CHBC-TV-2 Vernon, B.C.; (b) CHKL-TV-2 Vernon, B.C.; (c) one non-Canadian commercial; (d) one non-Canadian non-commercial. The Commission denies the carriage of additional non-Canadian commercial television stations" (Public Announcement, 1 March 1974, Decision CRTC 74-34).

4. Cable systems are permitted "to carry reruns of Canadian broadcast programmes...on the understanding that these will be Canadian network reruns and Canadian local station reruns complete with their commercial messages" (Public Announcement, 1 May 1974, Decision CRTC 74-89).

The evolution of CRTC policy is clear. In the first announcements, the commission did not appear to be very aware of, or at least much concerned with, the negative impact CATV could have on broadcasters. Once this impact came to be realized, with its ramifications on the broadcasting industry's performance, the CRTC became strongly protectionist. It felt that by limiting cable growth through restricting the services that CATV could provide, it could protect broadcasters from destructive competition, while at the same time saving the nation's television screens from complete domination by the United States.

However, through a combination of public outcry and realization that in an age of communications satellites and the laser, protectionism in communications is necessarily a short-run policy alternative, the CRTC changed its philosophy. Instead of simply protecting broadcasters against competition by placing restrictions on cable's services, the commission decided to also use cable and cable's resources to improve broadcasters' performance so that broadcasters might be able to compete more effectively.

Public Announcement, 10 March 1972

Due to pressure from the private broadcasters, the CRTC relaxed its Canadian content requirements for the private sector of Canadian broadcasting. The new requirements for all privately owned stations became, then, a minimum of 60 percent Canadian programming over the programme day and a minimum of at least 50 percent "in any recognized period of the broadcast day" (for example, prime time, now defined as 6 P.M. to 12 P.M.). In addition, the rule limiting the percentage of programmes that could be imported from any single country was dropped.

In return the CTV network was expected to improve the quality of the programming it actually produced itself, to extend its service, and to reorganize its corporate structure in such a way that the eight largest members would subsidize both the network and the smaller affiliates.

These revisions were enacted, after a June 1972 Public Hearing, with a CRTC Public Announcement dated 20 July 1972.

Public Announcement, 16 May 1972

The CRTC limited to a certain extent the ability of private broadcasters to undertake co-productions with American companies and have the programmes resulting therefrom count as Canadian content. At the same time, the CRTC declared a certain number of such co-productions to be in the public interest, as such productions could be of high quality and would give greater international exposure to Canadian artists. Specifically, such co-productions count as Canadian content (1) when the co-production is with producers in Commonwealth or French language countries and where 30 percent or more of the total cost of the programme or programmes is spent in Canada on Canadian participation; for series productions, less Canadian participation may result in some credit toward Canadian content; and (2) when the co-production is with producers in the United States and where 50 percent or more of the total cost of the programme or programmes is spent in Canada on Canadian participation.

In addition, the CRTC stated "recognition will only be given where, in addition to the required proportion of Canadian participation, there is a significant involvement by Canadians in the artistic control of the co-production and among its principal performers."

Such then was the CRTC's attempt to balance the conflict between low budget Canadian productions, which might deal with Canadian affairs, and high budget international productions, generally of a purely light entertainment genre with little concern for Canadian affairs.

Public Announcement, 21 July 1972: “Decision CRTC 72-224”

This decision approved an application by Global Communications, Limited for a licence to serve seven million people in southern Ontario from transmitters located in six communities (Uxbridge, Paris, Windsor, Sarnia, Bancroft, and Ottawa) and deferred decision on application to serve the Montreal area through a station located at Maxville, Ontario. This decision effectively created a second private English language tele-
EVALUATION OF CRTC POLICY

By reflecting on the results obtained in preceding chapters it is now possible to offer policy suggestions and a critique of CRTC policy. The critique will be made within the framework of the CRTC's stated goals, that is, protection of the broadcasting system. That framework itself will be addressed in the concluding chapter.

The econometric model developed in chapter XI determined that a station's viewing-share is affected unequally by different classes of stations. It was found that the number of U.S. alternate stations available will have the largest impact on the viewing-share of a local station. Significantly, however, the number of U.S. duplicate channels available has only a negligible effect upon the audience share of the local station. It also has been found that advertisers are most concerned with the reach of a station, and only secondarily concerned with the total viewing-hours the station delivers. Once a U.S. station approaches or exceeds the reach of the local station, the latter's revenue drops sharply.

This observation may, in large measure, be due to the advertising practices of the U.S. multinational corporations. Therefore, given that the CRTC is concerned with strengthening the financial viability of the Canadian broadcasting system, and at the same time promoting CATV development, the CRTC should consider regulations ensuring that as many American channels are duplicated on the cable as possible. This will fragment the Canadian audience for the U.S. channels without reducing the audience for the Canadian channel. The U.S. channels will then become nonviable as advertising mechanisms with which to reach the Canadian market.

Throughout the CRTC's history of cable regulation, it has shown a fear of allowing into Canada too many U.S. signals. In its announcement of April 1970, in fact, the commission showed a desire to limit the number of U.S. commercial channels to one in number. This easily may be the worst possible situation if promotion of Canadian television is the desired goal. Table C-3 shows that a single U.S. channel on cable may be expected to attract 20-30 percent of the total viewing-time, depending upon the number of Canadian channels also on the cable. With this viewing share the American station would become an excellent advertising vehicle for the multinational corporations. This hypothesis is supported by the KVOS experience. That a Canadian channel remains a viable advertising vehicle when facing numerous U.S. channels is shown by the CFPL experience.

It also has been shown, however, that successive additions of alternate U.S. stations have a continuing strong impact on the Canadian channel. Some evidence exists that their marginal impact may decline slowly as the number of these channels becomes larger. Therefore, in accordance with the findings of this study and the CRTC's stated policy of promoting the Canadian broadcasting system, it appears that the CRTC should maintain control over the types, rather than the total number, of U.S. channels being carried. In this light the CRTC may wish to vary the number of such alternate channels that may be carried on a CATV system according to the financial strength of the local station, but it may wish to fix the maximum number at three. Where possible, the CRTC should demand that each alternate U.S. channel be accompanied by a second U.S. station of the same network affiliation.

In the most recent major cable policy announcement, the CRTC has limited the total number of U.S. channels that may be microwaved. The present study indicates that the CRTC may wish to withdraw this rule and replace it by a regulation that places a limit of three alternate U.S.
channels on CATV systems and that these alternates must be accompanied by at least one or two U.S. duplicates.

The number of Canadian duplicate channels also was found to have a substantial impact on CBC affiliates. The new CRTC policy of deletion and substitution of such channels when carrying the same programmes seems to be in accord with its goals. The former CRTC policy of forcing the carriage of all such duplicates with grade-B contours in the area was perverse, since it fragmented audiences without an increase in viewer choice.

As stated earlier, multinational corporations account for 75 percent of the national advertising in Canada. At present Canadians only view U.S. channels for about 19 percent of the total Canadian viewing-time. Therefore, these multinational advertisers have not yet found it propitious to abandon the Canadian system and to rely wholly on the overflow viewing of U.S. stations. The policy suggestions given above should help ensure that the local station retains the predominant position in its own market. However, if felt desirable, steps easily could be taken to ensure that the Canadian system as a whole is able to retain its share of the multinational corporations' advertising budgets. This would be an attempt, then, to maintain a high degree of network advertising as opposed to national selective advertising.

If the total audience for Canadian television stations drops to 50 or 60 percent as may be expected if all urban areas, including the very smallest, are able to receive three U.S. channels via cable, total advertising revenues to Canadian broadcasting may be expected to decline sharply, due chiefly to a fall in network advertising.

Canadian Dimension, in its brief to the Special Senate Committee on the Mass Media, made the following point.

Now and in the future, American broadcasting should not be allowed to take money out of the Canadian advertising pool. Accordingly, in cross-border cablevision and satellite reception, advertisers whose products sell in Canada should be charged, on the basis of ratings, the full advertising rate for Canada . . . [such] revenue . . . to go to Canadian broadcasting. The charge can be collected from subsidiaries or as a customs fee on imports. If, to pick one current example, Gulf Oil did not want to pay the charge because none of it would be going to the American network and station which originated the sponsored program, then it could always change its name in Canada to British American, and advertise under that name here.9

who have up until now been benefiting from this overflow exposure. Such advertisers may realize that the net gain of blacking out such commercials and substituting others simply raises cost without increasing reach. Much will depend upon whether these corporations are able to close ranks and boycott such substitution.

The second question is much more difficult. Leland Johnson, in analysing the Federal Communications Commission's proposal in the United States for commercial substitution, found that such a policy may have built-in perverse incentives. He states:

One can argue that incentives would be blunted because the large potential revenues (at least in some markets) from commercial substitution would (a) distract broadcasters away from their responsibilities in local broadcasting and toward the more remunerative task of selling advertising on distant signals, and (b) attract into the industry entrepreneurs who have no deep interest in local broadcasting, but who wish to establish their "rights" to commercial substitution.

With the future of UHF [read Canadian television] not being all that bright (he might reason) and with advertising on distant signals so profitable, why not simply continue doing a token job of local broadcasting and live off the distant signals. If Johnson's hypothesis were to hold true in Canada, it would be due to the co-existence of two factors for the station so induced not to perform. Clearly, the station would have to be marginal and with little hope for turning a profit in its own operations, and also the amount of such substitute advertising would have to be much greater than one might suspect a priori.

However, there are pressures working to actually increase performance under this plan. Johnson points out that the regulators "can more easily encourage or force the station to do a better job in local broadcasting precisely because it does enjoy large revenues from an independent source." There is a different and theoretically more interesting incentive at work here also. It stems from the economic theory of broadcasting. It has been established that under oligopoly conditions there are strong incentives for each broadcaster to duplicate the type of programming of its competitors. In television financed by mass advertising and driven by the profit motive, diversity in programming does not commence until the audiences for the most popular types of mass programming become fragmented to such a point that minority programming will attract an expected audience share greater than would duplication of the programming on other stations.

Under the CRTC proposal, however, the private Canadian broadcaster will be obtaining revenues from the U.S.-style programming through commercial substitution. This may induce him to programme on his own station more distinctly for the Canadian audience. Were he to concentrate on his own channel with U.S-style entertainment shows, he would find that he was competing with all the U.S. stations in the area, including his "own." For example, suppose there were two U.S. channels available, with equal Canadian audience shares, one of which the Canadian station is using to substitute its commercials. Denote these stations as US-CTV and US-2, and give them 60 percent of the Canadian audience (without considering the private station's share). Assume there is one CBC-owned-and-operated station programming exclusively material designed for the special interest of the Canadian audience, and that it receives 40 percent of the viewing time. The viewing-shares of the three stations are:

<table>
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<tr>
<th>Station</th>
<th>Audience Share</th>
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<tbody>
<tr>
<td>US-CTV</td>
<td>30 percent</td>
</tr>
<tr>
<td>US-2</td>
<td>30 percent</td>
</tr>
<tr>
<td>CBC</td>
<td>40 percent</td>
</tr>
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Now, the private Canadian station, denoted by CTV, must decide how to compete with the other three stations; if it were to compete exclusively on the basis of carrying U.S-style programmes, the expected audience shares would be:

<table>
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<tr>
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<th>Audience Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>US-CTV</td>
<td>20 percent</td>
</tr>
<tr>
<td>US-2</td>
<td>20 percent</td>
</tr>
<tr>
<td>CTV</td>
<td>20 percent</td>
</tr>
<tr>
<td>CBC</td>
<td>40 percent</td>
</tr>
</tbody>
</table>

The CTV station's total saleable audience (US-CTV plus CTV) is 40 percent. If, however, it decides to compete by offering material of exclusive concern to the Canadian audience, the shares would be:

<table>
<thead>
<tr>
<th>Station</th>
<th>Audience Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>US-CTV</td>
<td>30 percent</td>
</tr>
<tr>
<td>US-2</td>
<td>30 percent</td>
</tr>
<tr>
<td>CTV</td>
<td>20 percent</td>
</tr>
<tr>
<td>CBC</td>
<td>20 percent</td>
</tr>
</tbody>
</table>

If the CTV station were allowed to sell time on both U.S. stations, the increase in its salable time would be even more pronounced should it decide to programme exclusively for the Canadian audience (60 percent versus 80 percent).

It will be noted that the permission given the CTV station to sell time on a single U.S. station has increased its incentive to programme for a distinctly Canadian audience. Were this permission denied, its expected audience share by broadcasting U.S.-style programmes would be 20 percent and by broadcasting Canadian programmes would also be 20 percent. The cost saving from using U.S.-style programmes would determine which course would be taken.

This incentive-effect depends upon a relative abundance of American channels compared to the number of Canadian channels. The effect also requires that there be a distinct Canadian system of broadcasting with that is unaffected by the addition of a large number of U.S. stations. The latter was found to be the case in Eq. (B-3) of Appendix C. Also, the greater the number of U.S. stations for which the CTV station is allowed to substitute advertisements, the more pronounced will be the effect. In addition, the station should be located in an area with heavy cable penetration.

While it is impossible to quantify this incentive effect, proponents of a distinctly Canadian system of broadcasting will find it comforting to know that cable television, through the importation of U.S. signals, may be used to improve the performance of Canadian stations.

Comment must be made at this time on the CRTC's approval of Global Communication's application to start a third English language network. To the extent that approval was granted on the premise that the new network would draw back audiences from the American stations and win back advertising revenues for the Canadian broadcasting system, the policy should be treated with a good deal of skepticism, especially in light of the discussion of chapter XII. Based on the data and analysis presented throughout that chapter, the following predictions regarding Global's impact on Canadian broadcasting seem reasonable.

First, if Global goes the route followed by CTV and aims for the mass appeal audience by programming mainly light entertainment shows (and this is the way it doubtless will continue to go since it is financed exclusively by advertising), the large bulk of its audience and revenues will come not from the American stations but from the nearby CTV affiliate or from private stations located in smaller Canadian markets. Viewing time for all Canadian television will increase by only about 4 percent in areas in which Global competes, while Global itself may attract about 15 percent of total viewing. Only a small portion of this will come at the expense of the CBC.

Second, the major impact that Global will have will be to fragment the audience for Canadian stations. This could result in an actual decline in advertising by the major multinational corporations as they begin to rely more and more upon the spill-over effect from U.S. border stations.

If the CRTC feels that Canada needs a third network and at the same time wishes broadcasters to foster Canadian identity, it should have licensed the third network to one of the existing networks. Ideally, of course, such a station could be the CBC which has a much better track record in "strengthening the cultural fabric of Canada" than the CTV will ever hope to approach. Lacking parliamentary funds, however, the dual network would be very difficult for the CBC to implement. Licensing CTV to operate the third network would be, however, an improvement over the licensing of a third independent company. Operating two stations in an area would force CTV on the second station to "counter programme" (that is, compete with the CBC to give expression to Canadian reality), as otherwise it would be competing with itself (on the present CTV network), which would be counter productive. Global doubtless will continue to duplicate the type of programming currently available on CTV and the American stations.

To the extent that approval of Global's application was conditioned by a desire on the part of the CRTC to create more production facilities and more opportunities for independent producers and Canadian talent, however, the decision could prove to be partially successful. The last major proposal of the CRTC was that cable companies compensate local broadcasters for services rendered. While from an economic efficiency point of view such a policy may be desirable, one may question whether the estimated $4 million per year would adequately improve the performance of broadcasting, which has an annual

16. J. Atlas Slaight, President of Global Communication, Ltd., was quoted as saying: "Revenue is the key. We can be as good as our revenue will allow us to be. If revenue does not progress, then we will have to cut service. There is no point in anyone kidding himself. The reason Canadian television thrives is U.S. and British programming. Any time people start saying we do not need it, we are all in terrible trouble. We at Global will proudly present good imported movies and good game shows." Toronto Globe and Mail, 5 September 1974.

In view of the CRTC's mandate to supervise the Canadian broadcasting system so as to "strengthen the cultural, political, social and economic fabric of Canada," one has cause to wonder why the CRTC is insisting on licensing new broadcast undertakings, and, moreover, why it was so protective of Global during its 1974 financial crisis when such stations "proudly present good imported movies and good game shows."
Budget of $300 million. Such an amount, as seen in chapter IV, barely begins to tap the monopolistic profits currently accruing to the CATV industry.18

One further source of untapped revenues would be the cable subscribers themselves. By subscribing to CATV in the first place, cable television subscribers have expressed a willingness to pay for additional television variety. For the United States, John McGowan and Merton Peck estimated the total surplus (that is, the percentage of total income viewers would give up to obtain the stated number of channels rather than go without television altogether) and the marginal surplus of television.19 The principal conclusion was that there was a substantial under-investment in television programming. The same conclusion holds for Canada.

Were CATV subscribers subjected to a tax of $10.00 per cable outlet per year, roughly 1/6 of the current subscription charge, an additional $21.3 million would be available for the Canadian system, based on the Statistics Canada subscriber data, a figure that would rise yearly.

Were $21.3 million a year from this source added to my own estimate of $30 million in cable surplus profits, plus whatever portion of the estimated $12 million currently spent by Canadian firms on U.S. border stations that would return to Canada through revision in the Income Tax Act, plus whatever proportion of the $24 million currently spent by multinational companies on U.S. border stations to reach the Canadian audience that would be returned by the commercial substitution plan, the Canadian system would gain an additional $51-$87 million a year, or an increase of 14 to 24 percent of total revenues.

In fact, cable television can present to the authorities a new way of

17. See, for example, Coase, "The Problem of Social Costs."
18. If my analysis that the surplus profits accruing to the top 45 cable systems in Canada will approach $30 million by 1976 is correct, the transfer of funds would be significant; however, see Robert E. Babe, "Cable Television Costs, Revenues and Profitability: The Issue of Tapping the Cable Surplus to Improve Broadcasting," mimeographed (A study prepared for the Department of Communications), August 1974.
19. Their estimates for the U.S. are given below.

<table>
<thead>
<tr>
<th>Number of stations</th>
<th>Total surplus</th>
<th>Marginal surplus</th>
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<tbody>
<tr>
<td></td>
<td>(percentage)</td>
<td>(percentage)</td>
</tr>
<tr>
<td>1</td>
<td>2.60</td>
<td>2.60</td>
</tr>
<tr>
<td>2</td>
<td>4.05</td>
<td>1.45</td>
</tr>
<tr>
<td>3</td>
<td>5.06</td>
<td>0.99</td>
</tr>
<tr>
<td>4</td>
<td>5.83</td>
<td>0.76</td>
</tr>
<tr>
<td>5</td>
<td>6.45</td>
<td>0.62</td>
</tr>
</tbody>
</table>


CRTC Cable Policy completely controlling broadcasting in Canada. As long as the primary method of reception of television signals remains an outside aerial, the CRTC has no control over the U.S. border stations sending their signals into Canada and attracting a large audience. Once cable becomes the predominant method of signal distribution, however, signals are contained in a pipe, and the randomness of signal emission is replaced by something that can be held in tight control. The amount of competition among Canadian stations can be ordered much more effectively with cable than without it; the amount of U.S. competition can be controlled, whereas, before CATV, it was subject to no control whatsoever and varied solely with geography. Indeed, for the first time, real planning may be introduced into the Canadian television industry.

The CRTC only recently has come to realize the potential this gives it to regain control over broadcasting. At the same time, however, one can be sympathetic to its efforts. It was coping with a problem that was very difficult and the solutions for which were hardly obvious.

It is fitting to close this chapter with a quotation from Graham Spry, the individual who, more than anyone else, is responsible for having brought about a Canadian broadcasting system. His efforts forty years ago led to the establishment of what is now called the Canadian Broadcasting Corporation. It seems appropriate to hear from him again in the 1970s when once more the future of the Canadian system of broadcasting is in some doubt. Because of cable we are moving from an age of relative scarcity of channels and choices to an age of expanding plenty. We almost messed up the great chance we had in radio and still more so in television. Technology offers us a second chance.

The money is there. The method is acceptable. If we do not take advantage of the opportunity it may not ever return, and as long as we remain Canadians we will regret having failed to create our own distinctive broadcasting industry and left it to be shaped by the purposes of the huckster and the blind forces of the market place.20


Part V

TOWARD A NEW LEVEL OF ANALYSIS
To this point, the present study has analyzed the role of cable television and made policy proposals within the framework of the implicit assumptions held by policy-makers in Canada, namely, that private broadcasting must be protected in order to permit it to contribute to the high ideals set for the system by the Parliament of Canada through passage of the Broadcasting Act. That act states that broadcasting should "safeguard, enrich and strengthen the cultural, political, social and economic fabric of Canada"; to this end "the programming provided by each broadcaster should be of high standard, using predominately Canadian creative and other resources."

It has been demonstrated, however, that the conduct required in order to serve these goals is antithetical to the economic interests of private broadcasters. Not only does U.S. programming carried by Canadian stations cost broadcasters less than the equivalent type of Canadian programming, it also attracts larger audiences and hence earns greater revenues than Canadian programming. It was, of course, in full recognition of these economic facts that the dual principles of broadcast regulation in Canada were conceived and implemented: state protection of the broadcasting industry against the forces of competition, and state imposed Canadian content quotas. Without these dual foundations of broadcast regulation, private broadcasting in Canada undoubtedly would have concentrated on rebroadcasting American network programmes and become in effect affiliates of the U.S. networks, little different from their American counterparts.
In order to gain some insight into the implications of the two basic principles of broadcast regulation and to assess the success of these principles in the past, some knowledge of the history of Canadian broadcasting is required. In addition, in order to form conclusions on the desirability of maintaining these principles in the years to come, it is necessary to survey the demands being made by the provinces for a share in jurisdiction over communications. This chapter deals with each of these prerequisites for a fuller understanding of broadcasting and cable television.

THE PAST

In 1929 the first Royal Commission on Broadcasting (the Aird Commission) recommended the complete nationalization of broadcasting in Canada. "The Commission was impressed with broadcasting as a potential instrument of education—education in the broad sense. Radio could become a great force in fostering a national consciousness and unity."

The commission determined, however, that prior to 1929 the private stations operating in Canada had not done so as a public trust. Such stations, in fact, affiliating with the U.S. networks. "Only CN radio (owned by the Crown) did much about Canadian programming. It was easier and cheaper to use recorded music and popular American programs, and most Canadian stations offered little else. There was a growing public discontent with these conditions."

The Aird Commission believed that radio was to become an important factor in the cultural evolution of the country; therefore, radio could be used positively to strengthen the cultural and political fabric of the country. Equally, however, if left to market forces it could serve as an agent for American cultural domination. Due to the observed propensity of private Canadian broadcasters to assume the role of re-broadcasting stations of the U.S. networks, and also due to the observed inclination of the publicly owned Canadian National radio stations to originate indigenous programming, the commission recommended the complete nationalization of radio. It was felt by the commission that Canadian nationhood was as much threatened by the private sector of Canadian broadcasting as it was by American stations receivable in Canada.  

In 1932 a special Parliamentary committee was appointed to evaluate the Aird Report and to make recommendations on the future of Canadian broadcasting. The committee recommended that a national, publicly owned radio network be created. It recommended that private stations be allowed to continue (a result, in part, of the intensive lobbying by private interests such as the CPR in the interval between the committee's appointment and the issue of its recommendations) albeit under regulation by the public broadcasting entity, and with the possibility that at a later date such private stations be taken over by the public agency.

In May 1932 the first Broadcasting Act was passed, establishing the Canadian Radio Broadcasting Commission. The CRBC had two major functions: to regulate broadcasting in Canada, and to itself engage in broadcasting. It was given powers to purchase existing stations, to construct new ones, and to "take over all broadcasting in Canada," subject to Parliamentary approval. Funding for the CRBC was to be entirely through Parliamentary appropriations.

The private sector of Canadian broadcasting was not nationalized. In fact, one reason for its survival in the early years was the reluctance of Parliament to vest with the public sector funding adequate to provide a national distribution system. Consequently, the CRBC was required to

2. CBC, CBC A Brief History and Background (Ottawa: CBC, 1970), p. 2.
3. A further factor leading to this recommendation was the belief that broadcasting would be extended to underpopulated areas only by means of public funds. Peers, The Politics of Canadian Broadcasting, p. 48.
4. CBC, A Brief History, p. 3. More specifically, the committee recommended that "the commission (the public broadcasting agency) should have power to regulate and control all broadcasting in Canada; to own and operate stations; to originate and purchase programs; to determine the number, location and power of all stations in Canada; to consolidate the issuing of licenses to stations; to prohibit privately owned networks; and subject the approval of the Parliament of Canada, to take over all broadcasting in Canada." Peers, The Politics of Canadian Broadcasting, p. 96.
5. Ibid., pp. 103-104.
6. In bringing the radio broadcasting act to Parliament (for the second reading) Prime Minister R. B. Bennett explained the motives for the establishment of public broadcasting as follows: "First of all, this country must be assured of complete Canadian sources, free from foreign interference or influence. Without such control radio broadcasting can never become a great system for the communication of matters of national concern and for the diffusion of national thought and ideals, and without such control it can never be the agency by which national consciousness may be fostered and sustained and national unity still further strengthened."

Secondly, no other scheme than that of public ownership can ensure to the people of this country, without regard to class or place, equal enjoyment of the benefits and pleasures of radio broadcasting. Private ownership must necessarily discriminate between densely and sparsely populated areas. This is a great defect in private owner­ship; it is an insuperable and inherent demerit of that system."

"Then there is a third reason to which I might refer, and one which I believe must commend itself to every honourable member in this chamber. The use of the air, or the air itself, whatever you may please to call it, that lies over the soil or land of Canada is a natural resource over which we have complete jurisdiction. ... I cannot think that any government would be warranted in leaving the air to private exploitation and not reserving it for development for the use of the people." [Emphasis added.] Dominion of Canada, Official Report on Debates House of Commons, third session, seventeenth parliament; vol. III, 1932 (Ottawa: King's Printer, 1932), pp. 3035-3036.
utilize the facilities of private stations. It is interesting to note that the federal government even to this date has refused to endow the public broadcasting system with funds adequate to permit self-sufficiency in the distribution of programming with the result that both the radio and television operations of the CBC must utilize privately owned broadcasting stations for such distribution.

To summarize, two major reasons for the survival of private broadcasting in Canada during the early years when its existence was threatened were the unwillingness of government to adequately fund its new creation and, closely related to this, the intensive lobbying by powerful private interests. A third factor was probably what Herschel Hardin has termed "the American ideology in Canada": If business can make a profit by entering a field, it is by definition desirable that it be allowed to enter.

Through the years, therefore, as it became obvious that full nationalization would never occur and as the private element of broadcasting began to expand, it became necessary to rationalize (justify) the existence of private broadcasting, given the grave concerns expressed over its existence by government in previous years. Consequently, the private sector was assigned the same set of goals that led to the creation of nationalized broadcasting in the first place (such creation being a defence against the negative characteristics of private broadcasting). Both the public and private sectors of broadcasting were to contribute to the strengthening of the cultural and political fabric of the country. It was, of course, recognized that the economic determinants facing private broadcasters had not changed in years subsequent to the Aird Commission—private broadcasters still faced ineluctable incentives diametrically opposed to the national policy: They wanted to become rebroadcasters of the U.S. networks. In this light, two major policies evolved: (a) broadcasting must be protected from market forces, not to change the system of incentives, but simply so that the private sector could gain the potential to engage in indigenous Canadian programming, and (b) Canadian content quotas must be superimposed upon the pre-existing and ineluctable system of incentives facing private broadcasters.

Canadian content quotas are very important in understanding broadcasting history. First, they give justification for the existence of private broadcasting, as government would be hard pressed to rationalize such existence without them. Second, they permit government to go about the business of protecting the revenues of the private broadcasters; again, this would be difficult to justify without such quotas.

It is a widely accepted principle of economics, however, that the performance of a private enterprise cannot be manipulated by attempting to regulate conduct (a quota of Canadian content), as it is always in the interest of the private firm to skirt the regulations through tokenism (for example, low budget games like "Beat the Clock" or coproductions with U.S. producers for international sales). Rather, it is held, in order to ensure the desired performance, it is necessary to restructure the system of incentives so that it is in the self-interest of the firm to fulfill the objectives set for it. From the time of the Aird Commission to the present, Canadian programming has been and continues to be antithetical to the financial interests of private broadcasters (it costs more and earns less). At the same time broadcasters face little risk of losing their licences if performance is deemed inadequate. However, the private sector continues to expand at the expense of the public sector as the recent creation of a second private television network demonstrates. The government and the CRTC are, in short, relying upon the good will of private broadcasters to sacrifice some of their economic gains in order to implement the national policy. The government is becoming increasingly reliant on the private sector to pursue the national objectives originally within the ambit of public broadcasting.

As recently as 1973 one independent analyst of Canadian broadcasting was able to conclude that private broadcasting had not contributed substantively to the national goals, and, in fact, competition forthcoming from private broadcasting had weakened the ability of the CBC to Canadianize its schedules:

The private CTV network has actively engaged in co-productions with other countries or in productions that are aimed for sales in the United States. In this way the network hopes to recoup expenditures forced upon it (by Canadian content quotas). However, these programs made both for Canadian and foreign consumption, are really American in flavor. The programs may fill the letter, but certainly not the spirit, of the CRTC's definition of Canadian content. They provide jobs for Canadian technicians, but the directors, writers and principal on-camera talent are almost always American.

Not only individual programs, but also CTV's overall schedule fails to be distinctively Canadian. Only 20 percent of its offerings in 1971-1972 were truly Canadian in style and content.7

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In March 1974, the CBC had 21.5 hours per week of regularly scheduled programming between the hours of 7 P.M. and 11 P.M. (excluding hockey). Of this 14 hours, or 65 percent, was produced in Canada. The CTV network had 22 hours per week of regularly scheduled programming (again, excluding hockey), of which 6 hours, or 27 percent, was produced in Canada. These six hours of programming were composed of "Pig and Whistle," "Headline Hunters," "Ian Tyson," "Target the Impossible," "Roq," "Fusion," "Surfami," and "W-5." BBM, Television Network Program Report March 4-March 17, 1974.
To summarize, it is apparent that broadcasting philosophy has turned full circle. At first private broadcasting, due to its propensity to import American programmes, was seen as a threat to Canadian nationhood; in consequence of this, government decided to create nationalized broadcasting. Private broadcasting was able to continue, however, due to the lack of will on the part of government to provide adequate funding for the public sector and due to powerful lobbying efforts. As private broadcasting continued to expand and grow, it became necessary to justify its existence; this was accomplished by bringing the private sector within the framework of the national goals set for broadcasting. In consequence of the application of the goals set for broadcasting to the private sector, however, it also became necessary to insulate the private sector from market forces in the hope that it could take on the characteristics of the public sector that had been created to supplant it in the first place. Broadcasting has been stood on its head, given the system of economic incentives, it was at first recommended that private broadcasting be abolished; through time, and due to the same system of incentives, government policy became one of protection of private broadcasting. At first the propensity of Canadian stations to import U.S. programming was seen as a threat to national unity; today, carriage of such programmes is seen as desirable and necessary in order to create revenues that will finance the Canadian programming requisite for national unity.

New pressures are emerging, however. The first set of pressures emanates from the public through the intermediary of cable television. The second set emanates from the provincial governments, who are demanding a greater role in the formulation of communications policies. These two sets of pressures are interacting and may very well spell the end of the historic duality of federal broadcast regulation.

Through the technology of cable television the public is demanding and receiving a multiplicity of U.S. channels. The audiences to Canadian stations are becoming increasingly fragmented. Normally, one would expect such fragmentations to harm the financial position of private broadcasters, making them less able and even less inclined than at present to engage in programming that will serve the national goals. The reaction of the regulatory board to such events has had two main thrusts: First, it has attempted to use the technology of cable television to protect the revenues of private broadcasters. To this end, it requires programme substitutions, e.g. ineradicable deletions, direct payments from cable systems to broadcasters, and so on. Second, and consistent with its philosophy that revenues forthcoming from U.S. programmes carried by Canadian television stations be used to finance Canadian programming, the CRTC is attempting to exploit Canadian viewers' affinity for U.S. television stations by permitting Canadian stations to insert advertising messages into the programming of such U.S. stations carried by cable systems.

In order to accomplish the integration of cable television with broadcasting so as to protect the revenues of the latter, however, centralization of control over cable television is necessary. Without centralization, the system collapses, as it becomes impossible to protect the Canadian private broadcasting system against U.S. competition (and, pari passu, to use the U.S. stations to enrich Canadian stations). Without such protection, even token Canadian content becomes more difficult, and the rationale for the private sector becomes very weak indeed. (Why maintain Canadian stations which concentrate on broadcasting U.S. programming when cable television can accomplish the same thing much more cheaply?) The internal contradictions of Canadian broadcasting are arising once again.

THE PRESENT: THE QUESTION OF JURISDICTION

Exclusive federal jurisdiction over broadcasting was determined by the 1932 Radio case. The interproviciality of radio spectrum utilization was the decisive factor in the case, as it was deemed impossible to control rationally the allocation of radio frequencies at the provincial level alone.

By the Victoria Cable Vision, Ltd. case the Court of Appeal extended federal jurisdiction from broadcasting to cable television systems with the reasoning that control over radio signals should not be divided between emission and reception. From these two cases, then, exclusive federal jurisdiction over CATV's broadcast receiving function appears to be within the constitutional allocation of powers to the federal government as given by the British North America Act.

8. [1932], A.C. 394.
9. 51 D.L.R. 2d 176.

At the same time, however, the BNA Act and interpretations of the act have given the provinces jurisdiction over educational and cultural affairs. Jurisdictional disputes between the federal government and the provinces regarding control over cable television have arisen, in part, from the CRTC's extension of control over CATV: from uses that may be made of over-the-air signals into areas that have primarily a cultural and educational impact (for example, cablecasting, licensing, extension of service, and so on). For this reason and others, the provinces, in recent years, have challenged federal control over CATV. Quebec has been the most vocal of the provinces.

In the view of Quebec, the provinces should have complete jurisdiction over cable television, radio and television broadcasting (including direct satellite broadcasting but excluding the CBC), and communications carriers (including private communications networks but excluding Telasat and the Canadian Overseas Telecommunications Corporation). Quebec desires provincial control over communications in order to ensure that its development and evolution is in accord with the social, cultural, and economic aspirations of the province.

With regard specifically to cable television, it is the position of Quebec that the provinces should have powers to regulate programming (including advertising, signal carriage, language, and provincial content); to set cable rates; and to regulate all other services offered by cable systems. With regard to television, the provinces should have powers to supervise and control all stations not owned by the CBC; to regulate programming (including advertising, language, provincial content, and so forth); and to grant frequencies in keeping with the bulk distribution of frequencies by the federal government. With regard to communications carriers, the provinces should have powers to: set rates; set interprovincial rates in collaboration with other provincial governments; determine the degree of competition between land and space communications networks; regulate all services provided by the carriers; and to obtain from an intergovernmental body the frequencies to be used by the carriers.

In summary, the position of Quebec is based, in the first instance, on a desire to protect provincial culture and language against the pressures from the pervasive English language media, and in the second instance on a desire to promote positively the enrichment and strengthening of provincial culture and language and to plan the development of the hardware telecommunications distribution systems in the province.

The western provinces generally are sympathetic to Quebec's position, as they themselves appear to believe that the Canadian media (for example, the CBC) are dominated by eastern Canadian influences with little relevance to western cultural values.

An additional factor leading to disaffection with federal jurisdiction over telecommunications is associated with the Province of British Columbia. That province believes that federal regulation historically has been ineffective in meeting the hardware needs of the province.

According to B.C.'s minister of transport and communications, the Honourable Robert Strachan, "Difficulties spawned in B.C. under federal oversight include many substandard telephone services in metropolitan areas as well as rural areas, cable operations licensed with too little regard for the needs and makeup of the communities served, and an inadequate patchwork of both cablevision and television broadcasting facilities in many parts of the province."11

The federal government itself appears to believe that its record in preserving over communications has been poor, as a reading of the green paper on communications will confirm.12

Solution to the problems articulated by Mr. Strachan, in the opinion of many parts of the province.11


12. The federal government's green paper on communications makes the following point. Among others: First, regulation of telecommunications carriers has been fragmented on a company-by-company basis. Consequently, members of the Trans-Canada Telephone System have been left with full responsibility in setting priorities and carrying them out with respect to interprovincial ("national") communications.

Second, some provinces have been able to participate in full regarding the development of communications in their provinces whereas others have been limited to the role of intervenor before the Canadian Transport Commission.

Third, there has been little effective planning by the federal government. "The powers of the CTC are suitable only for the broad economic regulation of a particular corporate entity, and are not related to any statutory national policy and objectives, such as the vital importance of east/west communication to the sovereignty and economic prosperity of Canada and to the preservation of its social and cultural identity. . . . All forms of communication are intimately intertwined with the social, cultural, and economic fabric of the country, and any change in one mode has repercussions, sometimes unexpected and often unpredictable, in others. Thus, while the CRTC, in fulfilling its responsibilities under the Broadcasting Act, can only be concerned with cable-television undertakings as part of the Canadian broadcasting system, its decisions may have a significant impact on the future nature, structure and ownership of telecommunications systems in all parts of Canada." See Canada, Minister of Communications, Proposals for a Communications Policy for Canada.
of the B.C. government, requires provincial jurisdiction over most aspects of telecommunications. British Columbia is demanding, by and large, the same powers as is Quebec (the important exception being that the federal government should retain control over the use by cable systems of off-air television signals), although the primary reason for their demands differs. Whereas Quebec believes it must gain jurisdiction in order to maintain the cultural integrity of the province, British Columbia is seeking jurisdiction primarily because of a general dissatisfaction with federal efforts historically in ensuring high-quality communications services. While Quebec believes that only the provincial government can guide the development of communications in such a way as to be in harmony with the province's cultural aspirations, British Columbia believes that the federal government has failed by economic criteria regarding service availability and quality, and so it is time to let someone else try.

The position of the three prairie provinces is dominated by the existence of crown-owned common carriers in the provinces, and for this reason their attitudes are shaped primarily by the anticipated economic impact federal jurisdiction could have upon these utilities. Each of the provinces believes that cable systems should be owned by the telephone company, although for somewhat different reasons. Saskatchewan believes ownership by SaskTel of all broadband network facilities (with nonprofit community organizations licensed by the CRTC to operate the cable system in each community) would lend itself to the establishment of a province-wide cable television grid through the principle of cost aversion. In order to achieve our first objective: extension of better services, particularly to rural and northern areas of the province, we are convinced that it is essential that we have the authority over all intra-provincial common carrier systems to set rates, and to direct the improvement of services, where required. This entails, first of all, jurisdiction over the B.C. Telephone Company which we believe belongs with the government of B.C.

"Secondly, it means provincial jurisdiction over cable systems as intra-provincial, common-carrier, closed-circuit distribution systems. We recognize here the need to lift from such a system the economic viability of the Canadian broadcasting system.

"Thirdly, it means that services via satellite and the location of earth stations in B.C. are a provincial concern because all such decisions affect and must be in keeping with the other provincial decisions in highways, transport and energy that direct the course of development within the province.

"And finally ... it has become clear to us that what we must deal with ultimately is the entire process by which the spectrum is allocated and the use to which it is put are determined for British Columbia. [sic]" Robert Strachan, "Opening Statement."
existing culture and language or, as with the prairie governments, to protect their own common carrier organizations.

The newer technologies, it should be added, would be unable to survive against the old (and hence the old would not need government protection) were they not meeting a demand expressed by the population. Similarly, provincial governments would be hard pressed to demand jurisdiction from the federal government if the populations in the provinces concerned were completely satisfied with the federal record.

I am not claiming that conservation of established technologies and cultures is a priori "bad." Nor am I claiming that the new technologies have no associated externalities (spill-over effects) which could make the social costs associated with them greater than the social benefits. What I do believe, however, is that the coercive powers of government should not be used to block the development of new entrants simply to maintain the economic and political power positions of a narrow class of vested interests unless the "public interest" clearly can be associated with such protection and conservation. Of course, the rhetoric employed by governments nearly always is such as to associate "protection" with "the public interest." It is only through analysis, such as that contained in this book, that one can determine whether or not such rhetoric has any substantive meaning.

THE FUTURE

At this point it is useful to summarize part of the essential analysis of this chapter.

1. This central focus of federal government broadcast policy was articulated with passage of the first broadcasting act in 1932 and remains extant today, that is "Broadcasting should serve to safeguard, enrich and strengthen the cultural, political, social and economic fabric of Canada."

2. Nationalized broadcasting came into existence on the assumption (based on some empirical evidence) that market forces were diametrically opposed to fulfillment of the goals set for broadcasting. The market forces that were present at the time of the creation of public broadcasting also remain extant today.

3. Attempts to use the resources of the private sector of Canadian broadcasting to further the social goals set for broadcasting, through implementation of the dual principles of broadcast regulation (state protection and Canadian content quotas) have met with mixed results at best.18

4. The ability of the federal government to protect the private sector of Canadian broadcasting from foreign competition (and hence its ability to use—or believe [pretend] it is using—the private sector as a chosen instrument for the national goals) is being threatened on two fronts: First, the Canadian viewers' affinity for U.S. style programming has been coupled with the technology of cable television with the consequence that the audiences to Canadian stations are being fragmented to a great extent. At some point, this fragmentation will take its toll on broadcast revenues. The reaction of the federal government to this potential impact of cable television has consisted of attempts to control cable in order to enrich private broadcasters (through policies such as commercial deletions and substitutions, programme deletions, restrictions on the number of channels cable systems can carry, direct payments from cable systems to television companies, the discouragement of high cable penetrations by permitting cable systems to charge unreasonably high rates, and so on). The second threat to federal broadcasting policy stems from provincial governments.

5. Provincial governments are accelerating demands for jurisdiction over cable television for three basic reasons: First, federal policy (which is applied nationally) cannot take into account regional differences regarding culture, language, and social aspirations, and since cable television is inextricably intertwined with the pursuit of such aspirations, cable should, in this view, be regulated at the provincial level. Second, the record of federal regulation, it is felt, has been poor in terms of the availability of facilities; the provinces, it is believed, can identify such needs and act to solve these problems more quickly than the federal government. Third, certain provinces fear the impact cable television, as a telecommunications system, could have upon the financial position of their crown-owned utilities.

6. Federal broadcasting policy cannot be maintained unless the federal government is able to neutralize the impact of cable television. The federal government cannot neutralize this impact without maintaining centralized control over CATV. Therefore, the federal government to date has stood firm against the demands of the provinces, and its tactical manoeuvres have included attempts to divide and conquer (by attempting to isolate Quebec, which desires cable jurisdiction for cultural reasons, against the rest, which are primarily hardware-oriented) and delay.

If the federal government remains adamant in its desire to use the private sector of the broadcasting industry to further its goals, the jurisdictional conflicts described above would appear to be difficult to resolve. In such a case, provincial aspirations in the field, however legitimate they may be, will continue to be met by frustration.

If, however, on cold analysis of the facts and data in historical per-
spective, the federal government were to decide that the most promising way of pursuing its oft-articulated goals for broadcasting was through adequate funding of the public broadcasting system (so that the CBC, as a minimum, is no longer dependent upon private broadcasting for the distribution of its programming and upon advertising for the financing of its programming), then a resolution of the conflicts would be possible. If it were determined that private broadcasting is not now and is unlikely in the future to become an important instrument for national unity (recall that almost 75 percent of the programming on the CTV network between 7 P.M. and 11 P.M. is American in origin), then the case for protection of broadcasting is weakened and hence the necessity for federal jurisdiction over CATV disappears.

There are advantages to the positive, promotive approach to broadcasting as exemplified by the increase in funding to public broadcasting versus the negative, restrictive approach that currently is practised by the federal government. In the first place, given the ineluctable system of incentives facing private broadcasting, the positive approach is much more likely of success. Second, the policy would be more "honest" in the sense that the coercive powers of the state would not be applied to protect the revenues of wealthy broadcasters and to restrict the freedom of choice of the viewing public in an attempt to induce performance that is probably impossible to attain anyway. Third, provincial governments could receive full jurisdiction over cable television, permitting their pursuit of the social, cultural, and educational goals they have set, as well as their efforts to meet the particular needs of their populations in terms of plant and equipment.

The positive, promotive approach has, of course, one major drawback: it of necessity requires that new funds be made available to public broadcasting. In this context, the debate would centre on the question: "What price for Canadian nationalism?" The magnitude of the resources would depend upon the extent to which one wishes broadcasting "to safeguard, enrich, and strengthen the cultural, political, social and economic fabric of Canada."

A FINAL NOTE

"Having a knowledge of the fundamental facts we can be prepared to reject old standards and forms as unsatisfactory systems. We can then also rightly comprehend the nature of the processes that have resulted in conditions as we know them and can directly apply that knowledge toward the obliteration of all that stands in the way of the full, unshackled social, industrial and intellectual development of mankind."17

"It must be realized that there is nothing more difficult to plan, more uncertain of success, or more dangerous to manage than the establishment of a new order . . . ; for he who introduces it makes enemies of all those who derived advantage from the old order and finds but lukewarm defenders among those who stand to gain from the new one."18

17. Myers, A History of Canadian Wealth, p. XXXVI.
Addendum
Communications: Some Federal Proposals

BACKGROUND

While this book was in press, there was a flurry of activity among governmental agencies regarding communications regulation and jurisdiction. The end result of this activity will be a restructuring of regulatory authority.

On 17 February 1975 the Canadian Radio-Television Commission, accompanying the issuance of a "Policy Announcement on Cable Television," published a series of policy papers on CATV. The commission stated that "it is now possible and desirable in the public interest to replace many of its policies with precise regulations which will enable cable television to continue to develop within a more clearly defined framework." The commission announced that public hearings would be held on its policy statements before their enactment as regulations.

For several months preceding publication of the CRTC policy papers, however, the federal Minister of Communications, Hon. Gerard Pelletier, had been endeavouring to convene the various provincial ministers responsible for communications for a second ministerial conference to discuss the provincial role in the regulation of telecommunications. Needless to say, certain provincial ministers were angered by the CRTC's unilateral publication of proposed cable policies, as they had been given the impression by the federal minister that provincial governments henceforth would have a role to play in the formulation of cable policy.

On 25 April 1975 the federal Minister of Communications published a policy document to form the basis of discussions at the forthcoming ministers' conference. A major feature of the document was the proposal to authorize through legislation "the Governor-in-Council ... to give formal directions to the Commission on the interpretation of statutory objectives and the means for their implementation ... to ensure that the development of policy would be, and would be clearly seen to be, under the control of elected representatives of the people." In other words, the CRTC could be stripped of most of its policy-making powers in the future. It can be argued that the documents published by the CRTC and by the DOC were the products of a power struggle between the two bodies.

FEDERAL PROPOSALS

Communications: Some Federal Proposals sets out "the intentions of the Federal Government, taking account of views expressed by the Provinces, as a basis for further consultation and an early revision of federal communications legislation." The paper contains three major proposals: creation of intergovernmental bodies to formulate communications policies; new legislation transferring authority for federal policy formulation from the independent commission to the Minister of Communications; and setting out "the intentions of the Federal Government, taking account of views expressed by the Provinces, as a basis for further consultation and an early revision of federal communications legislation."

3. For example, in a brief to the CRTC, Manitoba stated that the CRTC regulations were "unclear, uncertain, nondefining, inappropriate, impractical, invalid, null and void [that the CRTC was attempting] to widen, by way of regulation, the CRTC's authority beyond the powers of the Commission granted under the statute." Manitoba, "Submission of the Attorney General Before the CRTC, April 8, 1975 Hearing," 17 March 1975.


5. See, for example: Toronto Globe and Mail, 26 April 1975. Unilateral publication of the CRTC cable policy documents angered several provincial ministers of communications who had been engaged in bilateral negotiations with the federal minister over provincial input into policy formulation. Since 1968 the CRTC had had a relatively clear field in formulating policy, with the consequence that provincial views were accorded but limited weight in federal policy. "Mr. Pelletier stated that greater political control over the CRTC was being brought in because at present, the provinces could object that there was not much point in their negotiating communications policy with the federal government [sic] if the federal government could not issue instructions to the CRTC in line with policies jointly agreed upon." Ibid. The second federal-provincial conference was held in May 1975, three months after the publication of the CRTC policy statements.

6. Ibid.
communications; and the transfer of some regulatory authority to the provinces. Each of these proposals is now discussed in turn.

Creation of Intergovernmental Bodies

The provinces were invited to join in the establishment of a Committee for Communications Policy consisting of the federal and provincial ministers responsible for communications. "This Committee would appoint subcommittees of officials to study and advise on such matters of mutual concern as systems planning, interprovincial and international services, and technical standards." As the proposed legislation would vest with the Minister of Communications powers for formulation of policy, the committee would impact directly upon federal government policy.

In addition, the Minister proposed the establishment of an Association of Communications Regulatory Bodies which would make recommendations to the Committee on Communications Policy and sponsor studies on topics such as economic criteria for regulation. Consensus on specific issues could lead to uniformity of regulatory policies for the various jurisdictions.

Federal Legislation

In addition to legislation, referred to earlier in this book, merging the Telecommunications Committee of the Canadian Transport Commission and the Canadian Radio-Television Commission, second stage revisions were proposed to empower the Minister of Communications to direct the federal regulatory commission regarding the development of policy. As a result, representations by provincial governments to the federal government through the Minister of Communications would replace interventions before the CRTC and CTC.

Furthermore, "the proposed second-phase legislation would contain provisions to rationalize the relationships between federally-regulated carriers and community-antenna television (CATV) undertakings. The regulatory body would thus be empowered to approve all agreements between federally-regulated carriers and CATV operators covering the use of facilities and, as appropriate, to order federally-regulated carriers to furnish access to facilities at reasonable rates and without unreasonably restrictive conditions."

Increased Authority for the Provinces

The proposal to increase authority for the provinces has several dimensions:

1. Representatives from the provinces of Ontario and Quebec would be able to participate in both public and private proceedings of the federal commission relating to Bell Canada.
2. Regulatory authority over the British Columbia Telephone Company could pass to the province.
3. The federal commission would be authorized to ask the appropriate provincial bodies for advice on certain matters within federal jurisdiction if they had significant intraprovincial aspects.
4. The provinces would be represented on the new commission by part-time members. In addition, a representative of the appropriate provincial regulatory body would be entitled to take part in the public and private deliberations of the federal commission in advance of decisions taken regarding broadcast licensees.
5. Subject to "an agreement explicitly accepting federal authority to impose criteria or conditions on any undertaking offering any form of 'programming' for distribution on coaxial-cable systems . . . for the protection of the Canadian broadcasting system," the paper proposed that arrangements be negotiated "with regard to the common use of coaxial cable and other facilities so as to ensure the orderly and economical development of broadband-cable systems throughout Canada."

ASSESSMENT

The structure of regulation (as opposed to specific regulatory policies) described in the main body of this text was found in this study to be deficient for two major reasons: first, the inconsistent fragmentation of authority among agencies at the federal level of government and between the federal and provincial governments; second, and paradoxically in view of the first point, the undue centralization of authority at the federal level vis-à-vis the provinces. This undue centralization was caused not only by the exclusive jurisdiction possessed by the federal government over broadcasting and cable, but also by the implementation of this jurisdiction solely through an independent regulatory commission. An

7. Ibid., p. 7.
8. Ibid., p. 8.
9. Ibid., p. 11.
10. Ibid., p. 12.
11. "The Government is engaged in bilateral discussions with the Governments of British Columbia and Newfoundland with regard to future arrangements for the regulation, respectively, of the British Columbia Telephone Company and the telephone service provided in Newfoundland by Canadian National Telecommunications." Ibid., p. 13.
12. Ibid.
independent commission, by definition, is unconcerned with federal-provincial relations. The consequences of these structural faults, as has been seen, were partial regulation of the telecommunications industry by the telephone companies on the one hand, and provincial dissatisfaction with the communications infrastructure on the other.

It appears that the federal proposals, if and when implemented, will have three important consequences. First, government regulation of telecommunications should become more effective through consolidation of the federal agencies and the new powers given the resultant commission. The new Canadian Radio-Television and Telecommunications Commission will be given powers:

1. to rule on matters relating to the attachment of "foreign" terminal devices and interconnection of private and public telecommunications systems to the federally regulated common carrier systems; and, therefore, Bell Canada's arbitrary powers in these matters as discussed in Part III will be negated;
2. to remove from the federally regulated carriers' rate base any capital or other expenditures not deemed to conform to the public interest, to approve or prohibit the incorporation, acquisition, or disposal of subsidiary companies, and to prescribe cost accounting, depreciation, and cost separations practices and standards that would be binding upon the federally regulated carriers; each of these powers would enable the new commission to regulate Bell Canada more effectively.

Broadcasting is such an important area of Canadian culture; should it be left completely alone by Parliament? If important and sensitive questions are delegated, what is the sense of having elected representatives and a Cabinet? Everyone really is an expert on broadcasting, not of course over technical matters, but over the important questions of content and access. These are not traditional subjects of independent regulation. This delegation seems to be an act designed to eliminate the areas of potential conflict from the public arena. That it was done with so little opposition says little for our parliamentary system.

It is indeed ironic that the powers for the formulation of broadcasting policy originally may have been delegated to an independent commission of who is benefiting from it and who is paying for it, it is impossible (in the author's opinion) to make any informed finding as to the "reasonableness" or "justness" of rates. The proposals for government supervision of Bell's construction programme, in this light, must be considered to be an important move in the direction of effective regulation.

3. to approve all agreements between federally regulated carriers and cable television systems and, "at appropriate, to order federally-regulated carriers to furnish access to facilities at reasonable rates and without unreasonable conditions." Therefore, the regulatory powers currently exercised by Bell Canada over the CATV industry, as described at length in Part III, would be negated.
"in order to eliminate the areas of potential conflict from the public arena," and these same powers may now be returning to the elected representatives for precisely the same reason! The explanation, of course, lies in the fact that the focus of criticism of governmental policy devolved from the official opposition in the parliamentary forum to provincial ministers utilizing the press. The independent commission could, in large part, eliminate the conflicts from the first source, but it exasperated the conflicts from the second.

Third, the federal proposals make a conscious effort to decentralize the responsibilities for regulation within the contexts of wider regulation and ministerial control. While the proposals to establish the Committee for Communications and the Association of Communications Regulatory Bodies, to possibly delegate jurisdiction of B.C. Tel to the Province of British Columbia, to allow representatives of the provinces to partake in public and private deliberations of the regulatory body, and so on, should be welcomed by advocates of "cooperative federalism," one will be able to pass judgment only after experience with these new methods of cooperative regulation has been gained.

It does appear at this point, however, that cable television may continue to be a source of conflict between the federal and provincial governments. The Minister’s paper states:

The Government would be willing to discuss any practicable arrangements that the Provinces might suggest in order to give them a greater share in the process of licensing and regulating broadcast receiving undertakings. An essential prerequisite for any such arrangements would be an agreement explicitly accepting federal authority to impose criteria or conditions on any undertaking offering any form of "programming" for distribution on coaxial-cable systems, in addition to the technical certification of any radio-receiving apparatus used by such systems. Subject to this guarantee for the protection of the Canadian broadcasting system, it would also be possible to negotiate arrangements with regard to the common use of coaxial cable and other facilities so as to ensure the orderly and economical development of broadband-cable systems throughout Canada. The Government would therefore welcome a discussion on any proposal for practicable arrangements for this purpose.19

Obviously, if the Minister of Communications deems necessary the full range of powers over CATV claimed by the CRTC for the protection of the Canadian broadcasting system, provincial approval of the Minister’s proposals will not be forthcoming. (Federal regulation of closed-circuit programming, for example, has been a contentious issue in the past, and the above statement proposes retaining the jurisdiction for the federal government. Also, it is unclear at this writing whether arrangements that the federal government would consider to be "practicable" would be considered appropriate by the provinces.) While one may anticipate hard negotiations between the provinces and the federal government in the future, Communications: Some Federal Proposals at least makes possible such negotiations.

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