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Review of Communications Policies and Practices and their Industrial Impacts

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Introduction

The section is divided into two parts. The first part examines policies and practices concerning the broadcasting and cable television sector, and the second part examines the telecommunications and computer communications sector.

Within each broad sector the following format has been followed. An introductory section provides a definition of the sector, and a brief description of the legislative and regulatory framework. This is followed by a general overview of the industrial impacts of communications policies and practices in the sector, and conclusions regarding the relative importance of each policy or practice, in terms of industrial impact.

Detailed analyses of specific policies and practices are presented in the annex. For each specific policy or practice considered, a statement of the policy, the regulatory interpretation of the policy (if applicable), the intent of the policy (where required), the potential or conceptual industrial impact of the policy, and available evidence regarding the actual industrial impact are given.

Approach to Analysis of Industrial Impacts

Conceptually, the demand for Canadian telecommunications hardware and Canadian broadcast programs is a derived demand. The suppliers of telecommunications and broadcasting services require these inputs to produce their own services. In the case of private broadcasting, for example, stations are in the business of producing audiences, access to whom is sold to advertisers. Programs are used to attract audiences.

The demand by communications service suppliers for Canadian hardware and software will depend on such factors as the relative price of these inputs as compared to substitutes (e.g. imported hardware and software), the revenues of the service suppliers, procurement policies of the service suppliers and ownership policies. Communications policies which affect revenues, ownership, procurement practices, etc. of service suppliers therefore potentially have an industrial impact, even though their intent may not have been industrial.

The analysis is necessarily quite speculative. Data and studies are not available in a manner which make it possible to establish exact relationships in most cases.

Finally, it should be emphasized that since the primary objective of communications policies is not industrial, conclusions about the industrial implications of these policies do not reflect on the over-all soundness of the policies.

Television and Radio Broadcasting and Cable Television

A. The Sector

Broadcasting is defined in the 1968 Broadcasting Act as any radio communication in which transmissions are intended for direct reception by the public. Broadcasting undertakings fall into two main categories: broadcasting transmitting undertakings, and broadcasting receiving undertakings.

Broadcasting transmitting undertakings include three national television networks (the Canadian Broadcasting Corporation, Radio Canada and CTV Television Network Limited), one regional television network (TVA), one regional television service (Global), six national radio networks, provincial educational television stations (Ontario Educational Communications Authority, Radio-Quebec and Alberta Educational Communications Corporation), and individual commercial broadcasting stations, and some non- or limited- commercial community and student stations.

Broadcasting receiving undertakings refer to entities which primarily distribute signals received off the air i.e., the cable television industry.

B. The Legislative and Regulatory Framework of Broadcasting

Section 3 of the 1968 Broadcasting Act sets out a broadcasting policy for Canada. It addresses the objectives of both the broadcasting system as a whole, considered as a single system, and the national broadcasting service, taken as one element of this larger whole. Section 3 of the Act reads as follows:

It is hereby declared that

(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;

(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;

(c) all persons licensed to carry on broadcasting undertakings have a responsibility for programs they broadcast but the right to freedom of expression and the right of persons to receive programs, subject only to generally applicable statutes and regulations, is unquestioned;

(d) the programming provided by the Canadian broadcasting system should be varied and comprehensive and should provide reasonable, balanced opportunity for the expression of differing views on matters of public concern, and the programming provided by each broadcaster should be of high standard, using predominantly Canadian creative and other resources;

(e) all Canadians are entitled to broadcasting service in English and French as public funds become available;

(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;

(g) the national broadcasting service should;

(i) be a balanced service of information, enlightenment and entertainment for people of different ages, interests and tastes covering the whole range of programming in fair proportion,

(ii) be extended to all parts of Canada, as public funds become available,

(iii) be in English and French, serving the special needs of geographic regions, and actively contributing to the flow and exchange of cultural and regional information and entertainment, and

(iv) contribute to the development of national unity and provide for a continuing expression of Canadian identity;

(h) 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;

(i) facilities should be provided within the Canadian broadcasting system for educational broadcasting; and

(j) the regulation and supervision of the Canadian broadcasting system should be flexible and readily adaptable to scientific and technical advances;

and that the objectives of the broadcasting policy for Canada enunciated in this section can best be achieved by providing for the regulation and supervision of the Canadian broadcasting system by a single independent public authority.

The two principal instruments of the Government of Canada to achieve the statutory broadcasting objectives are the publicly owned national broadcasting service provided by the CBC and the regulatory and licensing process of the CRTC. The CRTC has the authority and responsibility not only to regulate the public and private elements of the industry, but also to supervise all aspects of the Canadian broadcasting system in order to achieve the objectives stated in the Broadcasting Act. In order to carry out its responsibilities, the CRTC was given powers to issue, amend, renew and revoke broadcasting licences, to make regulations regarding programming, to hold public hearings, and to attach conditions to licences. There are limitations to the CRTC's authority over the CBC including the absence of authority to suspend a CBC licence, and limitations respecting conditions of licence as described below.

Two safeguards were reserved: first, the Governor in Council was empowered to give directions to the CRTC on a number of matters such as the maximum number of broadcasting frequencies in a given area, and the classes of applicants to whom broadcasting licences may not be issued. The second safeguard reserved to the Governor in Council the right to set aside or refer back licensing decisions of the CRTC.

The CRTC reports to Parliament through the Minister of Communications. In addition, the Department of Communications is responsible for the administration of legislation which regulates the allocation and use of the radio spectrum in Canada, including issuing technical construction and operating certificates without which broadcasting undertakings may not operate.

The CBC, a Schedule D Crown Corporation, reports to Parliament through the ~~Secretary of State~~ Minister of Communications. The CBC is empowered to appeal conditions of licence imposed by the CRTC to the Minister of Communications and request the Minister to give written directive to the CRTC with respect to a condition.

C. General Overview of Industrial Implications of Broadcasting Policies and Practices

This section presents conclusions regarding the industrial implications of current broadcasting policies. These conclusions have been derived from the detailed analysis of particular issues which may be found in the annex.

Broadcasting policy in Canada has been developed in the light of several guiding principles. Because of recognition of the importance of television and radio broadcasting as cultural and entertainment media, cultural objectives have been considered as primary. Other guiding principles include the management of the radio spectrum as a scarce public resource and the extension of broadcasting services to all Canadians. Although broadcasting policies were therefore not primarily formulated to meet industrial objectives, they have implications for both hardware and software production.

On the hardware side, the value of fixed assets at historical cost in the broadcasting sector (including cable) amounted to $1.5 billion in 1978. The cable sector accounted for 37% of total fixed assets in the sector, the CBC for 35% and private radio and television broadcasting for 27%. On the cable side, the principal categories of fixed assets are distribution system plant and subscriber drops and devices, which together amount to 80% of the cable industry's fixed assets. In radio and TV broadcasting, tower, antenna and transmission equipment and studio, technical and mobile equipment account for 64% of total assets. Comparing the total fixed assets in the broadcasting sector of $1.5 billion to the $17 billion in the telecommunications sector, it appears that broadcasting policies and practices have had less significance for hardware manufacturing than policies and practices of the telecommunications sector. Moreover, the equipment considered above excludes the largest category of broadcasting equipment in Canada: consumer electronics communications goods, on which Canadians spend more than $1 billion annually. In the detailed issues examined in the appendix to this

chapter, two "policies" whose impacts are mainly on the hardware side are considered: the CRTC's hardware ownership policies pertaining to cable operators, and the CBC's extension of services policy. Neither of these is believed to have had a major impact on the Canadian equipment manufacturing industry, due to the relatively limited size of the markets involved, and to the fact that some equipment at least tends to be obtained from foreign sources. With the introduction of new services such as pay TV and videotex, communications policies in the area of broadcasting may have greater impact on hardware than in the past. This question will be discussed more fully in Appendix III: New Services.

On the software side, the broadcasting sector is a major user of the products of the program production industry in Canada. For the year ending August 31, 1977, Canadian television broadcasters spent over $0.5 billion on program development, purchasing and related costs. Expenditures by firms on television commercials represent another significant source of revenue for the program production industry. Results from the 1978 survey of motion picture producers in Canada (Statistics Canada 63-206) indicate that revenues from television programs and television commercials represented almost two-thirds of the total operating revenues of film and videotape producers in Canada. Therefore communications policies and practices which have implications for program procurement and production could potentially have a major impact on establishments which are engaged in film and videotape production. Consequently, this section focuses primarily on policies with software manufacturing implications.

In the annex to this section a number of policies and practices which have implications (potential and/or actual) for the program production industry are examined individually. First we consider policies which apply to TV, radio and cable: the policy on foreign ownership, cross-ownership of broadcasting undertakings and vertical integration between broadcasting undertakings and program suppliers. Turning to policies and practices which apply to radio and television broadcasting undertakings, the following are examined: Canadian content regulations, advertising regulations, and the establishment of educational television broadcasting stations. Incentives for program production, which affect the supply of programs and a number of items pertaining to the national broadcasting services, including extension of CBC services, the CBC's revenue sources, and its programming practices are also reviewed here. On the cable side, the implications of program substitution regulations, signal carriage priorities, and compensation of broadcasters by cable are examined.

Communications policies can affect directly or indirectly the demand or the supply of Canadian program production. As was pointed out in the introduction, the demand for program production can be considered analytically as a derived demand, since television programs are inputs to the operations of broacasters. In this respect, it is useful to distinguish between two types of policies: (a) policies which affect directly the demand for Canadian programs by broadcasters (e.g. policy affecting the procurement practice of broadcasters) and (b) policies affecting the demand for the services provided by broadcasters (i.e. the demand for air time by advertisers). Clearly these two types of policies may not be sufficient by themselves to ensure a sufficient revenue base for Canadian program producers. For instance, a change in procurement policy will be ineffective

if the broadcaster is not in a position to generate sufficient revenue to be channelled to Canadian producers. As well any policy to boost the revenues of broadcasters may only have a minor effect on Canadian producers unless appropriate procurement requirements are imposed.

Policies and practices which directly affect the demand by Canadian broadcasters for Canadian television programs are Canadian content regulations, the corporate procurement policies of the CBC, and the establishment of educational broadcasting services.

The content regulations impose minimum quantitative constraints which broadcasters must obey. Because of the relative cost and revenue-generating ability to Canadian broadcasters of American programs as compared to Canadian programs, it is quite likely that Canadian private broadcasters would demand fewer Canadian programs than they do presently, in the absence of the CRTC's content regulations. They therefore provide a positive stimulus on the production of Canadian programs. The drawbacks of strict quantitative quota, however, have been pointed out by numerous critics. Quotas have resulted in a lack of domestic production in certain categories of programs for English-language television - entertainment and drama in particular - categories which are, on average, more expensive and which offer more employment per hour of programming to the program production industry.

The CBC's procurement policies also have a major impact on the development of the program production industry, in that the CBC's program expenditures are larger than all other Canadian broadcasters' combined. The CBC's programming expenditures in 1978 amounted to $306 million, which represented 53% of the program expenditures of the broadcast industry as a whole. CBC's Canadian content levels are well above the CRTC's regulatory requirements. Although the CBC has in the past tended to rely almost exclusively on in-house productions to meet its requirements, it is now looking to private producers for a substantial portion of its increases in Canadian programming.

The establishment by a number of provinces of educational broadcasting services also directly affects the demand for Canadian programs, the extent depending on the procurement policies of these agencies.

A number of policies considered have indirect effects on the demand for Canadian programs. These policies fall into two major categories: those which affect the revenues of Canadian broadcasters, and those which affect the ownership of the broadcasting industry.

Policies and practices which directly affect the profitability of broadcasters determine to a large extent their ability to produce and procure Canadian television programs. However, the extent to which such policies have actual industrial implications depends on the uses to which broadcasters put their revenues. Policies of this type include funding of the CBC and educational broadcasting services, advertising regulations, and measures imposed on cable operators to protect the revenue base of local Canadian broadcasters such as program substitution regulations, signal

carriage priorities and compensation of broadcasters for rediffusion of their signals.

The parliamentary grant is the major source of CBC funding, representing close to ninety per cent of the CBC's total operating expenses. The size of this grant is therefore the most important determinant of the CBC's ability to contribute to program production activity in Canada. Similarly, funds granted by provincial governments for educational broadcasting services determines the level at which such services can support domestic program production.

Regulations regarding the amount of advertising which broadcasters many carry affect the profitability of private broadcasters (and the CBC to a lesser extent). The sale of air time is the principal source of revenue for private broadcasters. The effect of such regulations on profitability depends on both the price which broadcasters charge for advertising, and the elasticity of demand for television advertising time. Per capita television revenue from advertising in Canada is less than half of that in the U.S. or Australia. This state of affairs is probably due more to the fact that much U.S. programming can be directly received in Canada along with its associated advertising, than to constraints on the amount of advertising time which can be sold on Canadian television.

Measures to protect the advertising revenues of Canadian broadcasters appear to have been quite successful. The profits of the private television broadcasting industry grew at an annual average rate of 24 per cent in the period 1972-1978. However, the growth in profits was not accompanied by a commensurate increase in the demand for Canadian programs by private broadcasters.

Another possible means to boost the revenues of broadcasters would be to encourage cable operators to compensate broadcasters for their programs. Although the CRTC has tried to do so in the past, this has not, in fact, taken place. It is believed that revisions to the Copyright Act would be required to force cable operators to compensate rights holders, especially broadcasters, for the use of their programs. However, there is no reason to believe that such compensation would necessarily lead to an increase in the demand for Canadian programs by broadcasters, in the absence of specific requirements to do this.

The policies on foreign divestiture and on cross-ownership of private broadcasting undertakings have not had any significant visible impact on the Canadian program production industry.

In conclusion, therefore, it appears that the most important policies and practices affecting the demand for Canadian programs by the broadcasting industry are content regulations established by the CRTC, and the procurement policies of and funding granted public broadcasters in Canada.

The CRTC is currently conducting a review of the Canadian content regulations for television, recognizing that the existing quantitative approach has not been entirely successful for achieving the intended goals. It wishes to consider alternative approaches which would provide for the production of a wide range high-quality Canadian-produced programs to be enjoyed by significant numbers of Canadian viewers in all broadcasting time periods. Revisions to the content regulations could have major implications for the program production industry in Canada.

Turning now to the supply side, stimulative policy initiatives currently in place are the 100% Capital Cost Allowance provisions and the loan programs of the Canadian Film Development Corporation. In the past, the use of both these measures for television productions has been quite limited as compared to feature length films. The requirements for certifying that investment in a production is eligible for the CCA are currently being reviewed with industry. Among the modifications being considered are some which could improve the applicability of the provisions to television production.

The rather limited use of these provisions for television productions may be primarily due to the fact that the production of television programs is largely dominated by broadcasters. For 1978, it has been estimated that, of the estimated $398 million spent on television program production in Canada, the independents accounted for only $12 million or 3%. It is not evident that measures aimed at attracting investment into the program production industry will result in a significant increase in the volume and/or value of production, unless demand for these programs is also increased.

Vertical integration between broadcasting undertakings and program producers determines to a great extent the procurement practices of the broadcaster. The advantages, disadvantages and impacts of vertical integration have been examined in the annex. Policies and practices related to vertical integration have important impacts on the independent domestic program production industry.

Telecommunications and Computer/Communications

A. General Overview of the Combined Sector

The Telecommunications sector consists of the common carriers, firms engaged in the production of telecommunications hardware and software, and firms engaged in related research and development activities. The common carriers provide telephony, telegraph, teletype, data transmission and broadcast transmission services.

For the purpose of this report, a restrictive statistical definition has been adopted for the Computer/Communications sector. The statistics given in Part I relate to the computer service industry; included are establishments primarily engaged in providing computer services, and establishments primarily engaged in the sale and lease or rental of EDP hardware. A very much broader definition, based on total expenditures related to computer use, is also possible; this approach was taken in the DOC report "The Growth of Computer/Communications in Canada". The traditional demarcation between "Data Processing" and "Word Processing" is being blurred by technological change; this will probably lead to a gradual integration of Computer/Communications with Office Communications Systems. The data transmission services used in these sectors are, of course, provided by the common carriers.

Technological change has brought about a convergence of telecommunications and computing in the decade of the 1970s. Thus special purpose computers are used in telecommunications networks for switching, message routing and accumulation of billing and usage information; while telecommunications links between terminals and computers, as well as computers and other computers, have become an integral part of data processing networks. The consequences of this convergence and integration, which can only increase further in the 1980s, are discussed in more detail in Part 3, together with the new services to the business office and the home which are emerging as a result.

1) Telecommunications

Canada has been well served by its common carriers. Under their management, the Canadian telecommunications system has evolved into one of the most effective and technically advanced in the world. Prices charged for its services compare favourably with those charged for similar services in other countries.

Generally speaking, the carriers have readily accepted and assimilated technological change. Already, they are progressively introducing digital electronic switching. They have incorporated equally progressive technologies in the transmission segment of their operations, such as digital data networks, packet switched networks, satellite transmission and fibre optics. Progress has been less rapid, however, in the area of telephone apparatus.

The carriers have also been, over the years, strong supporters of Canadian manufacturers and important purchasers of Canadian communications products. The two largest carriers, Bell Canada and B.C. Tel, own controlling interests in the country's two largest telecommunications equipment manufacturers and in their research and development affiliates. The effect of this vertical integration upon the procurement policies of the carriers, and upon the rest of the communications manufacturing industry, has become a subject of inquiry and debate.

In 1978, operating revenues for the telecommunications carriers totalled $4.8 billion, and the value of installed plant, at cost, exceeded $17.0 billion. Approximately 15 million telephones were in use, about 30% in the business sector and the remainder in residential use. About 42,000 Telex/TWX terminals were being used for message/record communications.

Plant operated by the telephone companies (Telcos), including $513m of plant under construction, accounted for $16.0 billion (93.2%) of total telecommunications property and equipment, valued at $17.2 billion in 1978. This, in turn, included $5,934m (38.2%) of Central Office Equipment, $4,655m (30.0%) of Outside Plant and $3,080m (19.9%) of Station Equipment; the last category consists primarily of Station Apparatus worth $1,498m and Station Connections valued at $1,124m. The total for telephone plant included land and buildings valued at $1,293m, but this class of assets is not particularly relevant from the viewpoint of industrial impact.

The principal Canadian telecommunications carriers spent about $6.9 billion during the five year period 1973-77, for the acquisition and installation of new telecommunications equipment; the breakdown was $3,114m (45.1%) for Central Office Equipment, $2,010m (29.1%) for Outside Plant and $1,774m (25.7%) for Station Apparatus. Over the next five year period 1978-82, the planned expenditure will be about $9.9 billion; the expected breakdown being $4,037m (40.6%) for Central Office Equipment, $2,926m (29.5%) for Outside Plant and $2,975m (29.9%) for Station Apparatus. Annual investment in these three categories of plant was estimated at $1.8 billion in 1978, and is expected to exceed $2.0 billion in 1980.

2) Computer/Communications

Using the Canadian Information Processing Society (CIPS) Annual Census, it has been estimated that in 1978 there were over 11,000 computers installed in Canada having a monthly rental of $1,000 or more; the annual rental value of this base is estimated at over $1.0 billion. Evan's Research Corporation has estimated that there were over 17,000 machines installed in 1978 having a monthly rental value less than $1,000; this would include almost all micro-computers used for business, home and hobby purposes. Perhaps 60%, or about 10,000 of these machines are being used for business purposes; this is the base of "very small business computers" used in a recent DOC study on Office Automation Equipment.

For 1978, the number of data communications terminals has been estimated to lie in the range 225,000-275,000; a mean value of 250,000 may be used.

About 8-10% are high speed or "bulk" terminals, 75-80% are key-driven Cathode Ray Tube (CRT) type terminals, and the remainder are low speed, hard copy terminals. In addition to the 42,000 Telex/TWX terminals mentioned earlier, it is estimated that there were about 14,000 other message terminals, and about 8,000 facsimile machines in use.

The sale and lease or rental of EDP hardware has been and still is heavily dependent on foreign sourcing. Hardware procurement relies extensively on imports; attempts to set up a viable computer mainframe manufacturing industry in Canada have been unsuccessful. However, the advent of the microprocessor has significantly increased the possible extent of domestic supply, particularly in the area of sophisticated data and message communication terminals.

The provision of computer services still remains primarily a domestic endeavour. However, the penetration of the Canadian market by U.S. computer service providers, associated with U.S. parents recentralizing computing services may be increasing rapidly. The following table illustrates the point:

Table 1: Trend Estimates of Computer/Communications in Canada (millions of current dollars)

	1970	1975	1980(e)	1985(e)
Total Canadian User Costs	1185	2660	5590	9500
Domestic Computing Services Revenues	150	400	915	1600
Value of Computing Services Obtained From Abroad	70	150	550	1515

Source: Computer/Communications Secretariat, "The Growth of Computer/Communications in Canada" (Revised Draft), March 1978, Table XVII

It should be noted that all the above estimates are very tentative. Much further empirical work is required in this area before bounds and confidence limits can be established for such estimates. The value of the EDP hardware and services imported most probably exceeded $1.0 billion by 1979.

B. Legislative and Regulatory Framework and Policy Objectives

All telecommunications common carriers in Canada are subject to some form of regulation. Carriers falling under the federal jurisdiction (see Part 1) are regulated by the Canadian Radio-Television and Telecommunications Commission (CRTC), while carriers falling under provincial jurisdiction are regulated by provincial regulatory boards or agencies. There is no regulation of telecommunications equipment manufacturers, or of the computer services industry. Equipment and hardware imports are, however, subject to tariffs and duties which vary, in amount, by class and type of goods.

The statutory bases for federal regulation of telecommunications carriers are the Railway Act, the National Transportation Act of 1966-67, the CRTC Act as amended in 1976, and the Special Acts covering certain federally regulated carriers like Bell Canada, B.C. Tel and Telesat Canada. The Railway Act sets out the basic principles of regulation with respect to traffic, facilities and tolls. The National Transportation Act sets up the Canadian Transport Commission to regulate telecommunications carriers, as well as other forms of carriers; it outlines the powers of the CTC, the procedures to be followed, and provides for appellate mechanisms. The amended CRTC Act transfers the telecommunications regulatory function from the CTC to the CRTC.

Decisions rendered by the CRTC (and its predecessor regulatory agencies) can be challenged in the courts, on points of law. Judicial interpretations are therefore important for their precedent-setting capability. Two recent cases in the area of terminal equipment interconnection may be mentioned in this regard. The first is the Challenge Communications Ltd. case before the Federal Court of Appeal, and the second is the Harding Communications Ltd. case before the Quebec Superior Court; both cases were appealed by Bell to the Supreme Court of Canada after the lower courts had rendered unfavourable verdicts. Although Bell Canada lost both cases, the effects of these decisions are not as far-reaching as those of the U.S. Supreme Court's Carterfone decision, described elsewhere. These events have, however, led to increased pressures for liberalization of terminal attachment rules. The implications of the recent CRTC Interim Decision on Terminal Attachment to Bell Canada's switched, public network are considered later.

The basic policy objectives in telecommunications regulation are economic efficiency and social equity. To promote the former, the carrier must be allowed to earn a reasonable return on his investment, and tariffs for services must be set in such a manner that the resulting prices are economically efficient. Social equity, on the other hand, requires universal access to "basic" services at "reasonable" cost. The requirement, in the Railway Act, for "just, reasonable and ... non-discriminatory" tolls is a basic equity criterion.

It should be recognized that social equity objectives can sometimes conflict with economic efficiency ones, and that the regulator is faced with the task of reconciling such conflicts.

The federal draft Telecommunications Act (former Bill C-16) contains a section on policy objectives and principles. In addition to the economic efficiency and social equity objectives, it stresses the requirement for a high quality, technologically efficient, nationwide telecommunications network, under effective Canadian ownership and control. The trade-off between certain economic efficiency and social equity goals is also recognized.

A Federal/Provincial Working Group was established in March 1978 to study issues related to competition and industry structure in telecommunications. The Working Group's report was presented at the meeting of Federal/Provincial Communications Ministers in October 1979. The policy objectives and policy issues stated in that report have definite impacts for the

Telecommunications and Computer/Communications sectors; they have been taken into account in the Report to Ministers.

In April 1973 the Government of Canada put forward a position statement on Computer/Communications Policy. Commonly referred to as the "Green Paper", this position paper was presented not as a firm statement of settled government policy, but in order to provide a positive basis for discussion with provincial governments and others concerned with this important area. The Green Paper discusses the importance of Computer/Communications to Canada, describes the goals of policy as perceived by the federal government, and presents twenty-nine separate policy statements. These statements are grouped into five categories: General Policies, Data Communications Policies, Industrial Development Policies, New Computer/Communications Systems and Applications, and Coordination of Computer/Communications activities in the Federal Government. To the best of our knowledge, since the publication of the Green Paper there has been no definitive statement of policy objectives or of specific policies in this area, either by the federal government or by the provincial governments.

C. Increased Competition and Deregulation

Canadian policy in this area does not operate in a vacuum. Since the U.S. and Canadian telecommunications networks are closely interconnected and are based on broadly similar technology, and because of the close links between the two economies, developments in the U.S. do tend to influence developments in Canada, usually with a time lag. On the other hand, in attempting to draw lessons from the U.S. experience, one must keep in mind the differences between U.S. and Canadian institutional structures, legislative statutes and reglatory practices in the area of telecommunications, Telco ownership patterns, the smaller size of the Canadian market and the lower population density, particularly in non-urban areas.

The issue of deregulation and widespread competition is the most pervasive topic in the U.S. telecommunications sector today. The process started in 1968 with the Federal Communications Commission's (FCC) famous Carterfone decision. Other landmark decisions were the Specialized Common Carrier decision of 1971, the Open Skies decision of 1975, the Resale and Shared Use decision of 1976 and, finally, the Computer Enquiry II decision of April 1980. These decisions have greatly widened the scope of competition in the areas of network services, satellite transmission and terminal interconnection.

Similar pressures, therefore, can be expected to arise in Canada, both in the area of network services and in the terminal equipment market. Liberalized terminal interconnection is strongly championed by the independent Canadian equipment manufacturers and foreign equipment manufacturers, as well as many large, sophisticated users of communications services. It is argued that increased competition would benefit both the independent equipment manufacturers and the end users, by encouraging greater product innovation, producing equipment with superior price-performance, and increasng user choice; these views are advocated through bodies like the CMA, CBEMA and CICA. Liberalized inter- connection policies would undoubtedly have a major industrial impact, but the main

beneficiaries could turn out to the foreign suppliers of telecommunications equipment, rather than the independent Canadian manufacturers.

There has been less pressure, to date, for new entry into the network services market. The CNCP Interconnection Decision can be looked upon as establishing the competitive position of an existing national telecommunications carrier, rather than establishing a precedent for new Specialized Common carriers (SCCs) to enter this area. Both federal policies and CRTC regulatory practices related to new entry by Specialized Common Carriers and Value Added Carriers (VACs) remain to be definitively enunciated. Attempted entry by a U.S. SCC like Satellite Business Systems (SBS) would raise basic issues related to sovereignty and Canadian control, as well as the economics of competition. Another hypothetical possibility could be the attempt of a future national cable network to provide non-switched, private line transmission services. Value Added Carriers, on the other hand, could only become possible in the make of regulatory decisions which permit the resale and enhancement of basic transmisison services provided by the common carriers.

D. General Overview of Industrial Implications of Telecommunications Policies and Practices

Telecommunications policies have been generally formulated to meet objectives in areas like economic efficiency, social equity and national sovereignty. Although the meeting of industrial objectives was not the primary purpose of these policies, they have implications for the Canadian production of telecommunications equipment and, in some cases, for the Computer Service Industry. As stated earlier, the major carriers are now investing $2.0 billion annually on telecommunications plant and equipment, while the computer service industry is importing over $1.0 billion of EDP hardware and servcies.

As stated earlier, the demand for telecommunications hardware is conceptually treated as a derived demand related to the revenues of the carriers. This approach can be used to analyze the demand for Central Office equipment, Outside Plant and, to a somewhat lesser extent, Station Apparatus. The demand for hardware and software in the Computer/Communications area is, however, less affected by communications policies than by many other factors. In the present analysis, we have limited ourself to considering only the effects of Data Communications and Terminal Attachment rules upon the Computer/Communications area.

The policies analysed in this section relate to:

1. Network Interconnection
2. Terminal Attachment
3. Pricing of Monopoly and Competitive Telecommunications Services
4. Rate-of-Return Regulation
5. Vertical Intergration
6. Earth Station Licensing

7. Spectrum Policy
8. Extension/Upgrading of Service to Rural and Northern Communities.

Each policy is examined individually in the annex and its potential and/or actual industrial impact is discussed.

Based on the detailed analysis, we have attempted to draw some tentative conclusions regarding the relative importance of these policies with respect to their industrial impact. For analytical purposes, it is useful to divide Communications policies into three groups, as follows:

(i) those which directly affect the demand for equipment

(ii) those which affect the derived demand for equipment, by affecting traffic volumes, revenues and market shares

(iii) those which directly affect the supply of equipment

Policies which directly affect the demand for telecommunications equipment include Terminal Attachment rules, Extension/Upgrading of Service to Rural and Northern Areas, and Earth Station Licensing/Ownership rules. The last policy is of minor overall consequence, but the other two have been significant in the past, and liberalization of terminal attachment rules could produce a major impact in the future.

Given the numbers of telephone station apparatus, data communications terminals and message/record terminals in use, the importance of attachment rules is evident for both the Telecommunications and Computer/ Communications sectors. One reason for the enormous growth in the use of sophisticated, key driven data terminals has been the willingness of the carriers to allow customer data equipment, procured from various sources, to be connected to their networks. Attachment of non-carrier procured network-addressing telephone equipment, such as PBX's or telephone handsets, or data terminals with built-in auto dialers has not been allowed. This policy may have depressed the demand for sophisticated terminal apparatus and hindered its supply; liberalization could act as a major stimulant to demand. The consequences on the supply side of changing the terminal attachment rules will be examined later.

The upgrading of all non-urban service to, say, urban single party standard, and the extension of such service to Northern areas would be an enormous undertaking, which may not be financially viable. However, a major upgrading program like Bell Canada's Non-Urban Service Improvement Program (N.U.S.I.), which will improve all non-urban service in the Company's territory to four-party standard, can generate a significant additional demand for Outside Plant, and a more modest demand for additional switching equipment.

Policies which affect the revenues, market shares and profitability of the carriers, indirectly affect the demand for telecommunications equipment, which is a derived demand. Network Interconnection, Pricing of Services and Rate-of-Return Regulation fall into this category. The effect of Network

Interconnection, in the absence of new entry by Specialized Common Carriers, is likely to be minor. The other two policies, however, have major impacts, both actual and potential.

Pricing is the most important economic variable related to the demand for a service. The introduction of Direct Distance Dialing (DDD) in the late 1950's, combined with a continuous fall in effective long-distance rates, led to a huge increase in Message Toll Services and revenues, producing a strong derived demand for Central Office equipment. Similarly, the fall in the effective price of data communications for most of the 1970's may have contributed strongly to the upsurge in remote computing; this, in turn, has reinforced the demand for extended Digital Data Networks (Dataroute, Infodat) and Packet Switched Data Networks (Datapac, Infoswitch), as well as the demand for sophisticated data terminals. On the negative side, the absence of a Usage Sensitive Pricing option may have retarded the development of innovative new enhanced services, and slowed down the upgrading of the local network.

The permissible Rate-of-Return determines the profitability of a telecommunications carrier, and affects the availability of capital for investment in plant. Depreciation rules set out by the regulator determine, in effect, the service lives of various classes of plant. It is self-evident that accelerated depreciation, combined with a high allowed Rate-of-Return would spur capital investment in new plant, while artificially long service lives brought about by restrictive depreciation rules, combined with a low allowed Rate-of-Return would produce the opposite effect. Many would argue that, in spite of the $2.0 billion annual investment by carriers in telecommunications plant, an even greater rate of investment could have occurred with stimulative action in these two areas.

We shall now consider policies which affect the supply of telecommunications equipment. The most important ones are Vertical Integration and Terminal Attachment rules, and both have major impacts.

Vertical Integration determines, in effect, the procurement policy of the carrier. It will attempt to procure equipment from its vertically integrated manufacturing subsidiary, wherever possible, and only go to an independent supplier when the subsidiary cannot provide the required equipment, or forced to do so by a combination of outside pressure and/or superior price/performance of the independent supplier's equipment. The advantages, disadvantages and impacts of vertical integration have been examined at length in the appendix. On the positive side, it is claimed, vertical integration has enabled the continued existence of Canadian full-line equipment manufacturers like Northern Telecom, and greatly reduced the market share of the foreign multinationals. On the negative side, it is claimed that innovative young firms like Mitel have experienced difficulties in breaking into the Canadian equipment market.

The last situation, however, is also strongly influenced by Terminal Attachment rules which, in effect, determine the segmentation of the station equipment market into the carrier share and the customer provided share. Under the present environment, the vast bulk of the telephone station

equipment is provided by the carriers. This means that customer choice is limited. But it also means that, by choosing to procure from Canadian equipment manufacturers, the carriers can reduce the market share of foreign firms. This is why the potential liberalization of Terminal Attachment rules, as set out in the CRTC's Interim Decision with respect to Bell Canada's application, could have a major impact on both the demand and supply of telephone station equipment.

In conclusion, therefore, it appears that policies and practices related to Terminal Attachment rules, permissible rates-of-return and depreciation practices, and pricing of monoply and competitive telecommunications services are the most important in affecting the demand for telecommunications equipment. On the supply side, policies and practices related to Vertial Integration, and to any liberalization of Terminal Attachment rules, are the ones likely to have the greatest industrial impact.

E. Overview of Space and R&D Policies

Except for earth station licensing, policies respecting space and research and development have not been examined in detail. This is not because these policies are believed to have little industrial impact in the communications field. Rather, space policies and research and development policies are not policies with regard to which Ministers responsible for communications play the primary role. The Working Group therefore decided not to analyze individual policies in these areas. However, it wished to point out the industrial benefits of the activities of the Federal Department of Communications in satellite communications and research and development. The following overview is presented to serve this purpose.

Federal government initiatives in satellite communications have generally served to promote industrial benefits for Canadian equipment manufacturers. Since the establishment of Telesat Canada in 1969, the decisions taken by the federal government have resulted in the development of an advanced communications capability and a strong domestic industrial base. Canada now has several manufacturers of satellite ground stations and a prime contractor in the manufacturing of satellites (Spar Aerospace Ltd.). Canadian content for the Anik-D series of satellites will reach fifty per cent.

Spinoffs from space activities are wide-ranging and tend to nourish developments in other technically advanced sectors of the economy. The Air Industries Association of Canada recently estimated that there are now about forty companies active in space manufacturing endeavours, with sale of space-related equipment reaching about $140 million in 1979. The Canadian space industry has reached a point in its development where it is actively pursuing business opportunities in international markets.

The federal government has also positively influenced the Canadian telecommunications manufacturing industry through a combination of in-house and contracted-out research and development activities. A substantial quantity of research and development work has been contracted out to industry in such areas as fibre optics, space, new services for homes and businesses and mobile radio. Currently about sixty-five per cent of DOC's R&D expenditures are in the form of contracts to Canadian industry.

The government also attempts to encourage innovative research through shared-cost programs with industry. Shared-cost programs foster good government/industry collaboration, facilitate technological transfers and result in the implementation of major initiatives which otherwise may not come of age. Field trials of Telidon are an example of this.

Research in communications is also supported in universities. In 1980/81, DOC spent over $1.5 million in contracts for university research in areas related to the mandate of the department. University research serves to develop centres of excellence in communications research.

Annex

Review of the Industrial Impacts of Individual Communications Policies and Practices

Federal Department of
Communications

Broadcasting and Cable

1. Ownership Policy

(a) Foreign Ownership

(1) Policy

Section 3 (b) of the Broadcasting Act states that the Canadian broadcasting system should be effectively owned and controlled by Canadians. An Order-in-Council (P.C. 1969-2229) was issued in November 1969 which imposed limitations on foreign ownership in the private broadcasting and cable industries. The Order-in-Council is concerned with the eligibility of classes of applicants for a broadcasting license and excludes from eligibility:

(a) persons who are not Canadian citizens or eligible Canadian corporations

(b) governments of countries other than Canada or of political subdivisions of countries other than Canada and agents of such governments.

Essentially, an eligible Canadian corporation is one of which the Chairman or other presiding officer and all directors are Canadian citizens; which has 80% of its voting shares and paid-up capital owned by Canadian citizens or corporations, if it is a corporation with share capital; and which is not controlled by non-Canadians by any other means, including the holding of a significant proportion of the debt.

(2) Intent of Policy

As stated in the Broadcasting Act, Canadian ownership and control should safeguard, enrich and strengthen the cultural, political, social and economic fabric of Canada.

(3) Potential Industrial Implications

Rules on the ownership of the Canadian broadcasting system by Canadians might have been expected to result in programming and equipment procurement behaviour that would be more beneficial to Canada than if significant elements of the system were foreign-owned. Prior to divestiture, the major foreign interests in Canadian broadcasting included CBS, Famous Players and RKO-General.

(4) Available Evidence re Actual Industrial Implications

The Order-in-Council was implemented over a three-year period. Significant foreign divestiture took place. There are at the present time no broadcast or cable undertakings where foreign ownership is in excess of 20%.

It has not been possible to determine the effects of foreign divestiture on equipment procurement practices as data on equipment sources of broadcasters and cable companies are not available at present.

Similarly, the over-all effect of foreign divestiture on program production and procurement practices is not clear. It is very difficult to separate the effects of foreign divestiture from the effects of other factors, for example, Canadian content regulations. Of the 80 systems divested, 56 were cable television systems. Since programming is generally conducted by television and radio broadcasters (except for community program channel and special programming such as multi-lingual and children's channels on cable) these divestitures would not have a major effect on Canadian programming.

The over-all conclusion which may be drawn is that ownership is perhaps not as significant as behaviour, and that the behavioural consequences of Canadian ownership have been marginal.

Broadcasting and Cable

1 (b) Cross-Ownership of Private

Broadcasting Undertakings

(1) CRTC Practices

The CRTC has generally imposed limitations on cross-ownership between television broadcasting licensees and cable undertakings, through its licensing decisions. Exceptions include cross-ownership pre-dating CRTC and common ownership in small television markets.

(2) Intent of Practice

The Commission's position seems to stem from a concern, expressed during the early years of cable development, that cross-ownership might: divert financial and human resources from broadcast programming to cable system development; reduce the diversity of program voices; lead to potential discriminatory treatment of competing television stations carried on the same cable system; and create excessive information domination in a community where such cross-ownership exists.

(3) Potential Industrial Implications

Limitations on cross-ownership may have made more difficult co-operation between the cable and broadcasting industries on such aspects as program production, funding, pay television, etc.

(4) Available Evidence re Actual Industrial Implications

Cable revenues have not been used to any extent to cross-subsidize program production in Canada. However it is not clear that cross-ownership would necessarily change this situation unless appropriate regulatory constraints were developed and imposed.

2. Vertical Integration

(1) Policy

The Broadcasting Act states that all persons licensed to carry on broadcasting undertakings have a responsibility for the programs they broadcast.

The Broadcasting Act gives the CBC the power to originate programs and to secure programs from within or outside Canada by purchase, exchange or otherwise.

The federal government does not have a formal position on vertical integration between private broadcasters or cable operators and program suppliers.

(2) Regulatory Practice

The CRTC has been attempting to encourage both the CBC and private TV broadcasters to help develop an independent production industry by buying programs from independent production houses.

(3) Potential Industrial Implications

The benefits which might be claimed for vertical integration include lower cost to the broadcaster for programs, production of programs better suited to broadcasters needs resulting from co-ordination of broadcasting scheduling requirements with program production, an assured source of supply of programs which will allow the broadcaster to meet the requirements imposed on him by the regulator.

The potential disadvantage of vertical integration include restricting competition in the domestic supply of programs and retarding the development of an independent program production industry. It might be argued that because the main activity of the independent program production industry is production rather than broadcasting, this industry might be more innovative and agressive in marketing its products than integrated producers.

(4) Available Evidence re Actual Industrial Implications

The vast majority of Canadian programming broadcast by Canadian television broadcasters is produced by integrated producers. A study conducted for the Department of Communications by École des Hautes Études Commerciales estimates that true independents accounted for only 3% of the value of television production in Canada in 1978.

Their analysis suggests that the source of programming (independent vs. integrated) may be related to the types of domestic programs demanded by Canadian broadcasters. The demand for programs by broadcasters appears, in turn, to be influenced by the Canadian content regulations. It is argued that broadcasters produce certain types of programs such as news and current affairs in-house in order to meet the obligations imposed on them by the Broadcasting Act. Given the existence of in-house production facilities, the broadcaster then finds it more cost-effective to produce than procure the types of domestic programs, such as quiz shows, which enable him to comply with the Canadian content regulations at minimum cost. If this is the case, the existing regulatory scheme therefore contributes to strengthening the extent of vertical integration in the industry.

The CBC has recently been making greater use of the independent production sector. For example, it is increasing its expenditure on the English-language independent sector by a substantial amount, bringing the total for next year to around $18 million.

3. Canadian Content Regulations

(1) Policy

Section 3 (d) of the Broadcasting Act states that the programming provided by the Canadian broadcasting system should use predominantly Canadian creative and other resources.

(2) Regulations

CRTC regulates the Canadian broadcasting system bound by the policy objectives stated in Section 3 of the Broadcasting Act. Separate content regulations apply to AM and FM radio and television.

Television

Under CRTC's regulations, licensees must meet specific Canadian content quotas: 60% of their over-all schedule during period 6 a.m. to 12 midnight, averaged annually, 6 p.m. to 12 midnight, 50% for private broadcasters (including CBC affiliates) and 60% for CBC, averaged annually.

AM Radio

30% of musical compositions scheduled between 6 a.m. and 12 midnight must be Canadian. To qualify as Canadian must fulfil 2 of 4 conditions:

(1) instrumentation or lyrics principally performed by a Canadian
(2) lyrics written by a Canadian
(3) music composed by a Canadian
(4) live performance wholly recorded in Canada or performed in Canada and broadcast live in Canada

FM Radio

- No specific Canadian content regulations, but each licensee makes a written promise of programming performance. In this context Canadian content of musical compositions ranges from 10% to 30% for popular forms and 0 - 7% for other types.

(3) Potential Industrial Implications

- increase the supply of high standard Canadian programming.

- stimulation of Canadian music recording industry

(4) Available Evidence re Actual Industrial Implications

The regulations on Canadian content ensure that programming on Canadian stations over the whole day and in prime time is predominantly Canadian, averaged annually. On the whole, the rules have been observed. However, 70% of all English-language programming and 35% of French-language prgramming viewed in Canada is of foreign origin.

Critics of strictly quantitative content regulations have argued that Canadian content has been concentrated in certain types of programs which are low-cost, low-employment.

Repeat broadcasts may be used to fulfil the content requirements. These broadcasts do not directly benefit program production.

Provided certain criteria are met, co-productions may also qualify as Canadian. Such co-productions may be of less benefit in the short-run to the Canadian program production industry than programs using only Canadian inputs.

The AM radio regulations have been considered to be at least partially responsible for the dramatic increase in Canadian music production in the past decade.

4. Advertising Regulations

(1) Regulations

The Broadcasting Act empowers the CRTC to make regulations governing the amount of time devoted to advertising and the character of advertising that may be carried by radio and television licensees in Canada. Separate regulations apply to AM radio, FM radio and television, (CBC commercial policy is discussed in the note on CBC revenue sources).

In 1976, the CRTC established a procedure to assign registration numbers to all television commercial messages for the purpose of monitoring Canadian content in commercials. The amendment does not require Canadian content in commercials.

Bill C-58, an amendment to section 19.1 of the Income Tax Act proclaimed in September, 1976 is also a factor in television advertising. This bill disallowed the deduction of Canadian advertising expenditures in foreign countries as a legitimate Canadian tax expense item if such advertising was directed primarily to a market in Canada.

Provincial policies affecting radio and television advertising (e.g. taxation of advertising, prohibition of certain types of advertising) should be supplied by the provinces.

(2) Potential industrial implications

Regulations affecting the quantity and price of advertising have a direct bearing on the financial performance of those companies licensed to operate broadcasting stations. They therefore affect the amount of revenue which broadcasters could make available for funding Canadian programs.

In a 1976 announcement, the CRTC set out desired percentages of Canadian content which it hoped the advertising industry would attempt to achieve. These percentages were 70% for 1976, 75% for 1977, and 80% for 1978. It was hoped that this approach would stimulate the use of Canadian creativity in the production of television commercial messages for use in the Canadian broadcasting system.

The principal objectives of Section 3 of Bill C-58 were to redirect advertising funds to Canadian broadcasters, to make Canadian broadcasting outlets more economically viable, to improve the prospects of new Canadian stations and to make possible better programs.

(3) Available Evidence re Actual Industrial Implications

Television commercials represent a major source of revenue for the private program production industry, ammounting in 1978 to $35 million, or 40% of total revenues.

A study for DOC found that Bill C-58 resulted in higher revenue flows to Canadian broadcasters, strengthening their after-tax income by up to $7 million in 1977 and $10 million in 1978. It concluded that a number of new television stations were among the main beneficiaries. The existence of these stations guarantees an increased volume of Canadian programming provided Canadian content rules are observed.

However, Canadian firms may still find it attractive to advertise on U.S. stations if the U.S. station's Canadian audience is large enough to make the cost per person reached lower than could be achieved by advertising on Canadian stations.

5. Establishment of Educational Television Broadcasting Stations

(1) Policy

Section 3 (j) of the Broadcasting Act declares that facilities should be provided within the Canadian broadcasting system for educational broadcasting. The Governor-in-Council issued an Order-in-Council to the CRTC to permit the licensing of entities owned by, but not directly controlled by provincial governments to operate in the field of educational broadcasting. While educational broadcasting was not specifically defined, the Order-in-Council stated that the programming should be distinctly different from general broadcasting and should provide a continuity of learning opportunity, provide information on available courses of instruction, or involve the broadcasting of special education events.

The provinces of Ontario and Quebec operate educational broadcasting institutions, the Ontario Educational Communications Authority and Radio-Quebec. Each has licensed transmitters. The Alberta Educational Communications Corporation, operating ACCESS's television service, has no dedicated transmitters but buys blocks of airtime from the commercial stations in Alberta and offers a cable-delivered service. It also operates one AM and one FM station with six rebroadcasters plus five more authorized but not yet on-air. British Columbia has just recently established an educational broadcasting authority.

In addition, other provinces use block airtime on radio for educational programming.

(2) Potential Industrial Implications

- new source of revenue for Canadian program production
- buying of airtime on commercial stations to show programs may add to revenues of these broadcasters
- viewing of educational stations may fragment the audience of other Canadian stations
- overall, the net effect should be an increase in resources available for Canadian programming
- restriction of provincial broadcasting to educational programming may have inhibited provincial funding of programs.

6. Incentives for Program Production

(1) Policy

A film or video production that is certified as Canadian by the Secretary of State, either because it is a co-production between Canada and another country or because it is Canadian based on a points system is an asset that falls into Class 12 of Schedule B to the Income Tax regulations and is accorded a 100% rate of capital cost allowance for investment purposes. The provisions came into effect in 1974.

Since enactment of an amendment effective in 1976 such assets have included not only certified feature films but also short films (less than 75 minutes running time) and video productions of any length.

In addition, the Canada Film Development Corporation established in 1968, to assist the Canadian feature film industry, invests in productions of various types for television use.

The CRTC has attempted to encourage innovative Canadian programming in television, both in new licensing and renewals, and has attempted to encourage both the CBC and private TV broadcastrs to help develop an independent production industry by purchasing from independent production houses.

(2) Intent of Policy

The tax incentive was intended to channel private investors' funds into the Canadian feature film industry to provide it with the stimulus necessary to generate significant development.

The objects of the CFDC are to foster and promote the development of a feature film industry in Canada.

(3) Potential Industrial Implications

The original provisions of the CCA were intended to attract private investment into Canada's feature film industry. The purpose of the 1976 amendment was quite clearly to accommodate program production destined specifically for television use, since television programs are seldom of feature length and are commonly shot on videotape.

Although the CFDC's objective was to foster and promote the development of a feature film industry in Canada, films were defined broadly enough to cover television feature productions.

(4) Actual Industrial Implications

The success of the 100% CCA provision in developing Canada's film industry appears to be well established. Since 1974 there has been a dramatic increase in the level of private financing of feature films, the number of features produced per year, and the size of individual feature budgets. The impact of the CCA regulation has not been evenly felt by the English and French language sectors.. In terms of numbers of films produced, most of the impact has been transmitted to the English language sector.

The use of the CCA for television is limited as compared to film investments. Industry spokesmen believe that the provision is not easily adaptable for television production. Problems relate to such matters as the calendar for principal photography, and the certification of a series of programs for investment purposes.

7. CBC

a. Extension of Service

(1) Policy

Prior to 1961, all privately-owned television stations, as a condition of licence were required to be affiliates of the CBC in order to extend CBC network service to areas not served by CBC owned and operated stations. At March 31, 1980, there were 33 such stations providing CBC service for 20 per cent of the Canadian population.

CBC's Accelerated Coverage Plan, begun in 1974, extends CBC radio and TV coverage to all communities over 500 population that can be covered by a single transmitter. By the time it is completed, 99% of Canadian population will have access to basic national AM and TV service in English and French.

(2) Intent of Policy

The Broadcasting Act declares that CBC services in both official languages should be extended to all parts of Canada as public funds become available.

(3) Potential Industrial Implications

The current dependence of CBC on affiliates may affect programming produced and shown by the network. Affiliates often operate in smaller, marginal commercial areas and therefore require more entertainment shows to attract larger audiences and acceptable advertising revenues. The affiliates have expressed concern over the CBC's proposals to Canadianize the prime time television schedule. The continuing viability of many affiliates in light of the possible loss of advertising support with the loss of American programs could become a significant constraint to CBC future planning, if appropriate changes in the compensation arrangements between the CBC and its affiliates are not forthcoming, and therefore affect its demand for Canadian programs to be shown in prime time. The CBC is trying to avoid this affiliate constraint. It is now engaged in discussions with its affiliates respecting the long range development of the CBC-affiliate relationship, wherein possible changes in affiliate financing are being explored along with other ideas.

CBC's extension of coverage to all communities is providing benefits for Canadian manufacturers of broadcast transmission and reception equipment.

(4) Actual Industrial Implications

CBC has projected that a total of 630 transmitters will be required to complete the Accelerated Coverage Plan. About one half (or some 330) of these have been put into operation. The total cost of the plan will be in the order of $100 million. Although data are not available regarding the share of these expenditures spent on Canadian equipment, it should be noted that the CBC's procurement policies call for it to buy Canadian equipment wherever possible.

In the 1970s, the focus of CBC on extending its distribution facilities meant that fewer resources were devoted to expanding production facilities. From 1974/75 to 1979/80, the share of capital expenditures devoted to production facilities declined from 47% to 32%.

CBC

b. CBC Revenue Sources

(1) Approach

The CBC's main sources of revenues are parliamentary appropriations and advertising revenues from the sale of airtime. There is no advertising on CBC radio except that for federal elections and occasional specials where rights are involved.

CBC's general policy on advertising has been to carry fewer commerials than the maximum allowed by the CRTC. Commercials are excluded from certain types of programming such as children's programming and news and public affairs.

Revenues from export sales represent another potentially important revenue source.

(2) Potential Industrial Implications

Less reliance on advertising reduces the commercial imperative to schedule high audience appeal American entertainment programming in prime time. This could have a positive effect on the CBC's requirements for Canadian programs.

However, if revenues lost through reduction of advertising are not forthcoming from other sources, this lessens the CBC's capability to produce and procure quality Canadian programming.

Removal of CBC advertising may make some of these advertising dollars available to the private broadcasting industry.

(3) Available Evidence re Actual Industrial Implications

Net revenues from sale of airtime as a percentage of departmental expenses decreased from 17.6% in 1972 to 14.8% in 1979 (S.C. 56-204). In its 1978/79 Annual Report CBC indicated that it intended to increase the number of advertising spots in its television schedule to earn additional revenue. The overall advertising income of $123.7 million in 1979/80 represented an increase of $15.7 million over the previous year.

Parliamentary grants are the most important revenue source of the CBC. The net cost of CBC operations for the year ending August 31, 1979 was $539.9 million, representing 86% of the CBC's total operating expenses. (S.C. 56-204).

In 1979/80, CBC TV increased its participation in the international sales market, selling programs in seventy countries. Revenue from these sales amounted to approximately $1.5 million for the year.

Broadcasting and Cable

CBC

c. Program Provision Practices

(1) Approach

The Broadcasting Act gives the CBC a central place in the Canadian broadcasting system. Sections 3 (f) and (g) of the Act state that the national broadcasting service should be predominantly Canadian in content and character, be a balanced service of information, enlightenment and entertainment covering the whole range of programming in fair proportion, and contribute to the development of national unity and provide for a continuing expression of Canadian identity.

(2) Potential Industrial Implications

The CBC's program expenditures, being considerably larger than all other Canadian broadcasters' combined, have a major effect on the development of the Canadian program production industry. The CBC intends to look to private producers for a substantial portion of its increases in Canadian programming.

(3) Available Evidence re Actual Industrial Implication

For the year ending March 31, 1979, Canadian productions accounted for approximately 95% of CBC's total programming costs. In television, the volume of programming stood at about 18,000 hours of original production.

CBC television has increased the proportion of Canadian programming over the years to the point where, from sign-on to midnight, CBC English television achieved 68% Canadian content, and CBC French television achieved 72% Canadian content in 1979/80. The Corporation is working to effect further increases in its Canadian content levels as funds allow.

8. Program Substitution Regulations

(1) Regulations

Cable television regulations based on the Broadcasting Act allow local Canadian television stations in a cable television operator's area to require that operator to substitute the signal of the local broadcaster for a distant signal if:

(1) the programs are shown at the same time,

(2) the local broadcaster requests the substitution, and,

(3) the programs are identical.

(2) Intent of Regulation

Canadian broadcasters buy exclusive distribution rights to show programs in specified areas. The showing of these programs on distant stations imported by cable detracts from the commercial value of those programs to local stations, even though the local stations have bought distribution rights to them.

The policy is intended to protect the advertising revenues of local broadcasters by enabling them to retain a certain proportion of the audience which they otherwise would have lost.

(3) Potential Industrial Implications

Protection of revenue could provide positive impact on procurement and production of Canadian television programs by Canadian broadcasters, if additional funds are channelled into domestic productions.

(4) Available Evidence re Actual Industrial Implications

This policy may have a favourable effect on the revenue of local broadcasters but may encourage also the duplication of distant signals, reducing the choice of programs available to the viewer.

Substitution of Canadian for foreign signals brings a net revenue benefit for Canadian television generally, while substitution of local for distant Canadian signals benefits local broadcasters, perhaps at the expense of the distant stations, while protecting the integrity of the local licence. This form of substitution may also, however, result in advertisers buying both markets instead of just one. The CRTC estimates that about 55% of the substitution involves distant Canadian signals and 45% foreign.

Systems with less than 3,000 subscribers are exempt from the substitution requirement, but this regulation is currently under review.

9. Signal Carriage Priorities

(1) Regulations

The priority of signals carried by a cable TV system is determined according to the Cable TV Regulations issued by the CRTC in November 1975, under the Broadcasting Act. In sections 6 and 15 of the Regulations, priority of TV signal and of radio signal carriage is to be given in the following general order: local signals, regional signals which are not duplicated locally, the community channel (for TV only), "optional" signals (i.e., principally the American stations').

The position of the educational television service of any province in this priority list depends firstly on the location of the TV transmitter in relation to the cable TV system and secondly on its status as a closed circuit TV service. If the province concerned does not have any broadcasting licences and wishes to use the cable TV systems for distribution of educational programming, one channel on the basic cable service must be made available by the cable TV licensees. However, this channel does not have to be a clear channel, under the current regulations.

(2) Intent of Policy

The signal carriage priorities are intended to assure that Canadian local and regional stations are carried on the basic service, on unimpaired channels, and are therefore available to cable as well as non-cable viewers.

(3) Potential Industrial Implications

By protecting the access of local and regional broadcasters to local audience, to some limited extent signal carriage priorities help to protect their revenue base which is required for procuring Canadian programming.

(4) Actual Industrial Implications

Where cable contributes to market fragmentation, it reduces the viewing shares of local television stations.

This policy is a necessary but not sufficient condition to ensure that the revenues of Canadian broadcasters, and therefore their ability to finance the production of Canadian programs, are protected in situations where the capacity of the delivery system is limited. The condition is not likely to prevail in the future in light of the new technology which is being implemented (e.g. fibre optics, converters).

10. Hardware Ownership Practices

(1) Practices

The CRTC generally requires, except in special circumstances, that cable television licensees own as a minimum, the local headend, amplifiers and service drops including the inside wiring contained in the systems. This requirement is not contained in CRTC regulations as such. However, since 1975 the CRTC has generally annexed a requirement of minimum ownership of plant as a condition of licence renewal.

(2) Intent of Policy

By requiring cable operators to own the headend facilities, the CRTC assures that cable licensees control the point of origin for programs distributed to subscribers. Section 3 of the Broadcasting Act specifically imposes on licensees responsibility for programs they broadcast.

With regard to ownership of drops and inside wiring, the CRTC has concluded that it is important for licensees to provide, install and maintain the inside wiring so that they can respond effectively and efficiently to service inadequacies, and can market the service for the convenience of subscribers.

Particularly in the early stages of cable development, the policy was intended to forestall frivolous applications in which the applicant had no financial stake and to provide tangible assets on which to raise funds in the markeplace.

(3) Potential Industrial Implications

Some carriers maintain that the viability of fibre optics could come about earlier if cable television and other telecommunications services were integrated on the same wire.

The CCTA has stated that if telephone companies owned all the plant, cable television development will not be based on subscriber demand but on long-range telephone company plans. They feel that ownership of the plant by cable companies makes the cable operator more receptive to regulations and conditions of service to subscribers because he has an economic stake in retaining his license. Furthermore they argue that if cable television owners do not own their means of distribution they will find it difficult to acquire financing needed to build and to improve their systems.

(4) Actual Industrial Implications

The existence of the cable industry has created a market for the equipment involved, which, however, it is believed, tends to be obtained from foreign rather than domestic sources. Foreign sourcing may be related to the limited size of the over-all market for equipment by cable operators in Canada, currently of the order of $70 million to $80 million, and/or to the fact that the cable sector has thus far displayed little cohesion in its approach to equipment procurement.

The cable industry is presently engaged in a medium term assessment of its equipment requirements with a view to rationalizing its equipment procurement and situating it to the extent possible in Canada. Equipment manufacturers are conducting a parallel study about their capability to service the requirements of the cable industry. It is not possible to predict the outcome of these undertakings.

1.1. Compensation of Broadcasters by Cable

(1) Policy

The CRTC encourages voluntary compensation payments by cable operators to broadcasters. However, cable operators in Canada at present do not have to compensate broadcasters for their programs. Without enabling legislation there is no simple mechanism to achieve such a transfer of funds. Revision of Canadian copyright legislation to cover rediffusion of broadcast signals by cable television operators has been suggested as one means of compensating program producers and rights holders, especially broadcasters, for the use of their programs.

Copyright legislation has not changed substantially since 1924. It does not take into account broadcasting, cable television, satellites and so on.

(2) Intent of Policy

The CRTC has suggested in the past that cable licensees assign a fixed percentage of their revenues to aid Canadian broadcasters and the Canadian program production industry, for use in production of Canadian programs.

(3) Potential Industrial Implications

Compensation of broadcasters by cable should help to protect the revenue base of broadcasters which is available for the production of Canadian programming.

(4) Actual Industrial Implications

If the Copyright Act was revised to include compensation payments, it should be noted that this could have a negative impact on the Canadian balance of payments, since many stations carried over cable are imported from the U.S. However, it is believed that domestic law or international convention do not require providing similar protection to foreign broadcasts as to domestic ones. It should be noted that Canadian TV licensees are among the major claimants against U.S. cable copyright funds, although no compensation has yet been dispensed.

Compensation payments would divert revenues from Canadian cable operators to Canadian broadcasters and provide an increased revenue base which could be allocated to Canadian programming.

Telecommunications and Computer/Communications

1. Network Interconnection

(1) Federal Policy

- Telco Monopoly in provision of local loops and public switched network services

- Outside the family of monopoly telephone services, the Government continues to recognize CNCP as an alternative national carrier.

- Restricted Entry

The statutory bases are section 265, 320 and 321 of the Railway Act, which respectively relate to Facilities; Provisions Governing Telegraphs and Telephones; and Traffic, Tolls and Tariffs.

CRTC Practice

- Type I and Type II Interconnection authorized between Bell Canada and CNCP networks; pending for B.C. Tel.

- Telco/CNCP Duopoly in the provision of competitive services

- The CRTC has not yet made definitive rulings regarding Specialized Common Carriers (SCCs), Value Added Carriers (VACs) or Resale and Shared Use of Telco services; these types of competition do not currently exist in Canada.

Policy Intent

The intent of this policy is to increase user choice and availability of telecommunications services falling outside the boundary of monopoly voice services provided by the Telcos. The restoration and improvement of CNCP's competitive position with respect to Bell Canada does not, however, equate to a right of unrestricted entry by other Specialized Common Carriers or Value Added Carriers.

(3) Potential Industrial Implications

- Degree of interconnection allowed between CNCP and Telcos can affect their revenues and market shares of competitive services.

- If competition leads to greater user choice and better service, is the total market for these services increased?

- What effect does a change in Telco and CNCP revenues and market shares have on overall procurement for the industry, in quantity and sourcing?

(4) Available Evidence re Actual Industrial Impact

- Historically, Telcos have procured almost all their equipment from Canadian manufacturers.

- The majority of CNCP central office equipment is supplied by Canadian manufacturers. Telex and data terminal equipment is usually foreign sourced, mainly because no suitable Canadian equipment is available.

- Bell Canada/CNCP Interconnection award too recent for any significant impact on revenues and market shares to have occurred.

2. Terminal Attachment

(1) Federal Policy

DOC has consistently favoured liberalized terminal attachment, where it is feasible and where the appropriate regulatory body has deemed this to be in the public interest.

CRTC Practice

- Data equipment and terminals are allowed partial access to Bell Canada and B.C. Tel networks, generally through a data access arrangement.

- Network non-addressing telephone apparatus is also allowed partial access to the public switched network.

- Bell Canada does not, under Rule 9 of its general agreement tariffs, allow access to network-addressing telephone apparatus, but has applied to the CRTC to revise its attachment conditions for customer owned equipment if CRTC deems this to be in the public interest.

- pending a hearing and a Final Decision scheduled for the spring of 1981 the Commission has, in Telecom Decision CRTC 80-13, set out new interim requirements in this area; these interim rules are considered to be a considerable liberalization of the existing Bell Canada Rule 9. The Interim Decision has been petitioned to the Governor-in-Council by the Government of Ontario.

Policy Intent

The intent of the policy is to allow greater user choice, but at the same time to protect the integrity of the public switched network. DOC initiated the voluntary Terminal Attachment Program (TAP), to evolve standards for terminals which could be interconnected to the public network. Certification of terminals is performed under TAP and such certification is accepted by Bell Canada, B.C. Tel, CN Telecommunications and CP Telecommunications.

(3) Potential Industrial Implications

- A liberalized terminal attachment policy will result in increased competition, innovation and user choice in the terminal equipment market.

- Liberalization would create new market opportunities for both foreign and Canadian equipment manufacturers.

- Unlike the Telcos, who attempt to procure from Canadian manufacturers as far as possible, end user choice would be based largely on equipment characteristics and price-performance. In price competition, it is likely that foreign suppliers, operating from a large U.S. market base

and with the resources of multi-national diversified operations behind them, would have the advantage over the independent Canadian suppliers. Procurement from Canadian sources could, therefore, be expected to decrease.

- A large proportion of the terminal equipment used for data communications is imported, especially intelligent terminals designed around micro-processors. If network addressing capabilities were added to such terminals, the end user would have a superior product. The demand for network addressing telephone apparatus would, however, be negatively impacted.

- The Telcos and some Canadian manufacturers have voiced the concern that under a very liberal terminal attachment policy, U.S. and foreign manufacturers would capture a significant share of the telephone station apparatus owned by the end users.

(4) Available Evidence re Actual Industrial Impact

- As a result of the present terminal attachment policy, the bulk of the telephone station apparatus in use (telephone handsets, key telephones, PBXs, etc.), is currently provided by the telephone companies, and procured from Canadian manufacturers.

3. Pricing of Monopoly and Competitive Telecommunications Services

(1) Federal Policy

The statutory basis for the setting of tariffs is section 321 of the Railway Act, which relates to Traffic, Tolls and Tariffs. The Act provides that

(i) All tolls shall be just and reasonable and shall always, under substantially similar circumstances and conditions with respect to all traffic of the same description carried over the same route, be charged equally, to all persons at the same rate.

(ii) A company shall not, in respect of tolls:

(a) make any unjust discrimination against any person or company;

(b) make or give any undue or unreasonable preference or advantage to or in favour of any particular person or company or any particular description of traffic, in any respect whatever; or

(c) subject any particular person or company or any particular description of trafic to any undue or unreasonable prejudice or disadvantage, in any respect whatever;

The requirement for "just, reasonable and non-discriminatory" tolls forms the cornerstone of pricing policy for telecommunications services.

CRTC Practice

The CRTC seems to have adopted the following pricing philosophy

- Value-of-service pricing and systemwide rate averaging for monopoly services, using cross-subsidization to maintain specific rate structures.

- Low, flat rates for residential basic local service, to encourage universal access; substantially higher rates for business local service.

- Preventing the Telcos from cross-subsidizing competitive services with revenues from monopoly services; this requires cost-of-service pricing for competitive services in order to prevent "predatory pricing", which has been defined as pricing a service below its cost of provision, in order to enter a market or prevent entry by a competitor.

Policy Intent

The intent of these policies is to meet the social equity goal of universal access, and to prevent unfair advantages to the Telcos in the provision of competitive services. It should be recognized that value-of-service pricing and systemwide rate averaging necessarily imply the cross-subsidization of some services by others, and that these pricing philosophies have been practiced by the carriers for many years.

(3) Potential Industrial Impact

- Pricing structure has a direct impact on the service output mix of carriers.

- If prices for message toll services and business services are higher than those warranted by cost-of-service considerations, this could suppress demand and depress revenues if these services are price-elastic.

- A reduction of prices for message toll or business services would stimulate business demand for telecommunications services, which could result in increased requirements for transmission and switching plant, as well as station apparatus, thus benefitting Canadian equipment manufacturers. However, if these services are not price elastic, the possible benefits of reduced prices for them would need to be offset by increased rates for other services if the carrier's over-all rate of return is to be maintained. In this case, the net effect of such reductions on the demand for telecommunications equipment would depend on both the relative elasticity of demand and the revenue share of each service.

- For competitive services, depending upon the definition of cost (average or marginal), the non-predatory pricing floor may be too high, and thus lead to demand suppression; this is particularly true for sophisticated, non-voice services.

- The pricing of data-communications services has an important bearing on the growth of remote computing and "Office of the Future" applications, together with their associated demand for sophisticated hardware and software, in the form of intelligent networks and multi-function, intelligent terminals.

- Inefficient pricing schemes negatively impact aggregate carrier revenues, and may cause a misallocation of investments, thus affecting the structure of carrier plant.

(4) Available Evidence re Actual Industrial Impact

- Greater carrier investment in central office equipment and station apparatus, than in outside plant

  - for 1973-77 the expenditures were Central Office Equipment $3114.0m (45.1%), Station Apparatus $1773.8m (25.7%) and Outside Plant $2010.4m (29.1%)

  - for 1978-82 the planned expenditures are Central Office Equipment $4036.6m (40.6%), Station Apparatus $2974.5 (29.9%) and Outside Plant $2926.2m (29.5%).

- The introduction of digital data communications networks (Dataroute and Infodat) produced a significant decrease in low and medium speed data communications costs, leading to an upsurge of remote computing; this, in turn, produced a major increase in the demand for sophisticated data terminals.

- The introduction of packet switched digital networks (Datapac and Infoswitch) has been too recent to produce a major impact on carrier revenues, but they could help to provide the telecommunications services necessary to underpin "Office of the Future" applications and other new services.

4. Rate-of-Return Regulation

(1) Federal Policy

As stated earlier, the statutory basis for setting tariffs is Section 321 of the Railway Act, with its requirement for "just, reasonable and... non-discriminatory" tolls. Federal policy has held that this objective is consistent with a system of regulation under which regulated carriers are permitted to earn a reasonable financial return on their investment, consistent with the requirement for providing high quality basic telecommunications services.

CRTC Practice

As a test for "just, reasonable and ... non-discriminatory tolls," the Commission has adopted Rate-of-Return regulation, setting the

- Permissible Rate of Return
- Depreciation rules for various classes of items in the rate base
- Inclusion rules for the definition of profits and revenue requirements.

(3) Potential Industrial Impacts

3.1 Permissible Rate-of-Return

- the permissible rate-of-return determines the financial strength of the carrier, and hence its ability to raise capital, both through equity and debt financing;
- carrier construction programs have to be financed, in a large part, by raising money on the capital markets;
- the construction program provides a direct link with the demand for the manufacture and installation of telecommunications equipment.

3.2 Depreciation Rules

- determine, in practice, the service life of plant;
- may interfere with, or distort the economically optimal rate for the introduction of new plant and technology, particularly under the present conditions of rapid technological change;
- may compel carriers to carry on their books large amounts of obsolescent but undepreciated plant.

Depreciation rules therefore have an immediate impact upon the demand for new telecommunications plant.

3.3 Inclusion Rules

- Rate-of-return regulation based on a physical asset base encourages capital deepening and the use of a high capital/labour ratio; this has a positive effect on equipment manufacturing;

- Treatment of the net revenues and profits of unregulated subsidiaries has an important bearing on the entry of carriers into areas other than regulated telecommunications operations; if such profits are included in the calculation of the permissible rate of return, this acts as a disincentive for such new operations.

(4) Available Evidence re Actual Industrial Impact

- There is a perception that existing depreciation rules may have led to the continued use of obsolescent plant (e.g. step-by-step switching, twisted pair wires, etc.) by some carriers, and retarded technical innovation.

- On the other hand, the past 25 years have seen the introduction of new, sophisticated technology in the areas of switching and long-haul transmission; this has led to considerable capital deepening (perhaps an Averch-Johnson effect?) and partially offset the possible negative impact of existing depreciation rules on the demand for equipment.

- Regulatory lag has increased, and this has brought into question the appropriateness of particular levels of the Rate-of-Return in a period of high inflation; regulatory lag has

  - a negative effect on investment, but

  - a positive effect on efficiency, in that it encourages a carrier to practice strict cost control.

5. Vertical Integration

(1) Federal Policy

a) There are no specific policies regarding the appropriate degree of common ownership and control which may be exercised between and among

- Telecommunications Service Providers
- Installation and Maintenance entities
- Facility owners
- Equipment manufacturers
- Research and Development entities

b) The Working Group on Competition/Industry Structure, in its October 1979 report, suggested that the Vertical Integration issue, i.e. the ownership, by certain Canadian telecommunications carriers, of equipment manufacturers and affiliated R&D subsidiaries, required the attention of Communications Ministers.

c) In the past, Communications Ministers and regulatory authorities have not found the vertically integrated nature of major portions of the Canadian telecommunications industry to be to the detriment of subscribers; this has sometimes been construed as implicit support for vertical integration.

d) Industrial and Competition policies relevant to this area may be affected by the decision brought down by the Restrictive Trade Practices Commission, following the conclusion of its inquiry into the vertically integrated structure of Bell Canada.

CRTC Practice

- The CRTC recently approved the vertical integration of Automatic Electric and Lenkurt Electric with B.C. Tel without, however, making a finding of either benefit or harm to the public interest.

(3) Potential Industrial Impacts

- The benefits claimed for vertical integration include lower costs, equipment better suited to Canadian needs resulting from the coordination of telco service operation requirements with equipment design and manufacture, and a continuing, fruitful role for domestic R&D in a high technology field.

- Because of the small Canadian domestic market, it can be argued that both domestic and foreign sales are necessary to support the R&D expenditures required by a full-line equipment manufacturer in this area. The access to assured domestic markets and telco operating experience provided by vertical integration is claimed to be necessary

to enable Canadian manufacturers like Northern Telecom to compete in foreign markets with other multinational suppliers; these suppliers usually have the advantage of a larger degree of government support for R&D activities, and/or a large home market which is protected by government in all developed countries outside Canada and the U.S.

- Opponents of vertical integration claim that it

  - restricts competition and leads to higher prices
  - retards innovation
  - reduces consumer choice and flexibility
  - makes more difficult the establishment of a boundary between the monopoly and competitive sectors.

- The claimed advantages and disadvantages of vertical integration have direct consequences for both the integrated equipment manufacturers, and for the rest of the equipment suppliers.

- A change in the vertically integrated environment and/or the procurement practices of the carriers could be beneficial to some independent Canadian manufacturers, but not to the Canadian telecommunications equipment industry as a whole. Foreign entry into the Canadian telecommunications equipment market would be facilitated, especially for the multinational firms who are already manufacturing for the much larger U.S. market, which has similar technical standards and lies in close proximity.

- If any changes are made to the vertically integrated industry structure, they should be done with reference to industrial strategy and communications policy objectives, as well as competition policy objectives.

(4) Available Evidence re Actual Industrial Impacts

- The telecommunications equipment manufacturing industry is dominated by Northern Telecom, a Canadian multinational company in its own right, and to a lesser extent by Automatic Electric/Lenkurt.

- It is considered by many that vertical integration has served Canada well in the past; in 30 years the industry has moved from a position where virtually all telecommunications technology was imported, to one where Canadian industry is competing in world markets with domestically developed technology.

- Almost 50% of Northern Telecom's equipment sales now take place outside Canada; the Canadian manufactured portion of these exports obviously help to reduce the huge adverse balance of payments in manufactured goods.

- Small and innovative firms like Mitel, however, have run into problems; thus Mitel has found it easier to supply the SX-200 superswitch to AT&T operating companies, than to Bell Canada. Mitel does, however, supply other equipment to Bell Canada.

6. Earth Station Licensing

(1) Policy

The policy on licensing of earth stations operating with Canadian satellites permits licences for television receive-only (TVRO) earth stations to be granted to broadcasting undertakings and telecommunications carriers. In addition, licences for transmit-receive earth stations operating at 14/12 GHz can be obtained by the telecommunications carriers.

(2) Potential Industrial Impacts

- Broadening of ownership in the TVRO area would significantly enlarge the market, but Canadian manufacturers would face competition from foreign sources for this business.

- With one exception, there does not appear to be any significant near-term market for earth stations that would be influenced by further changes to the current licensing policy; the exception lies in the possible grant of TVRO earth station licenses to entities other than broadcast receiving undertakings.

- Potentially, there are substantial future markets related to land-mobile and direct broadcast satellite applications.

- These markets could be affected if licences for transmit-receive earth stations were restricted to telecommunications common carriers.

(3) Available Evidence re Actual Industrial Impact

- Allowing broadcasting undertakings to receive licences for operating TVRO earth stations did enlarge the market, with the majority of legal earth stations being provided by Canadian manufacturers.

7. Spectrum Policy

(1) Policy

Canadian spectrum utilization policies are developed primarily to ensure the efficient use of the radio spectrum as a limited resource. A secondary but important consideration is to ensure that specific policies, by their timing and content, provide opportunities for Canadian manufacturers. The Federal Government considers that consultation with the users of the spectrum, manufacturers of equipment and others interested in the utilization and long-term planning for the spectrum is essential.

(2) Potential Industrial Impacts

- Spectrum Bands and Associated Services

a) Policies in the band 12.7 - 12.95 and 14.5 - 15.35 GHz. Services involved: services associated with short-haul microwave systems; transmission of TV channels and those services associated with broadcasting receiving undertakings (BRUs).

These policies provide Canadian manufacturers with the opportunity to develop Canadian products in the field of digital systems.

b) Policy covering the range 406 - 960 MHz. Services involved: amateur, broadcasting, fixed, mobile, radio astronomy, mobile satellite and radiolocation services and industrial and medical operations.

This new allocation to the mobile services offers an opportunity to establish a solid industrial base in Canada to serve Canadian needs in these services.

c) Policy covering the range 890 - 10.68 GHz. Services involved: broadcasting, mobile-support, protection and control, telephone, video and data, CATV.

These policies are due to be reviewed in 1980.

(3) Available Evidence re Actual Industrial Impacts

a) The new assigned frequency bands for services associated with BRUs did not result in the hoped for development of the appropriate equipment in Canada; primarily because the Canadian market is too small to interest the domestic manufacturers.

b) The new allocation to mobile services is too recent for it to have had an impact. Government assistance to domestic manufacturers may be required in this area.

8. Extension/Upgrading of Service to Rural and Northern Communities

(1) Federal Policy

Although there is no specific statutory basis for policy in this area, the social equity criterion of universal access to basic telecommunications services has provided the underpinning for programs to extend and upgrade services to rural areas and northern communities.

The Rural Communications Program was established by the Department of Communications as a result of a growing concern about the apparently increasing disparity in the level of communications services available between urban and rural Canada. It has the following objectives:

a) To provide the engineering/economic framework for the development of federal policies on rural communications;

b) To foster federal-provincial cooperation in the improvement of rural services;

c) To stimulate Canadian product design for rural communications;

d) To provide the basis for a coherent domestic market for equipment used in improving rural services.

CRTC Practice

- The Commission, in its decision CRTC Telecom 77-7
  - commented that the telephone is an essential tool for developing and improving the conditions of life in rural areas and
  - directed Bell Canada to implement four-party service as the basic rural service, in a four year program.
- Bell Canada's response was to start implementation of its comprehensive Non-Urban Service Improvement (N.U.S.I.) program, planning for which had started in the early 1970s.

Policy Intent

The intent of this policy is to improve the conditions of life in rural areas and northern communities, by upgrading the quality of basic telephone service available to the residents of such areas and communities. The ultimate objective is to make available in such areas telecommunications services which, in range and quality, begin to approach those which are routinely available, and taken for granted, in major urban areas.

(3) Potential Industrial Impacts

- Conversion of all multi-party service in non-urban areas to the single or two-party basic residential service offerred in urban Base Rate Areas (BRAs) is an enormous task, requiring massive capital investment.

- If conventional technology is used, programs to upgrade rural service require large increases in outside plant, and modest increases in central office equipment for the exchanges serving the areas covered; this hardware is readily available from Canadian manufacturers.

- The common carriers argue that the rates for basic residential local service, in rural areas, do not cover the cost of provision; this disparity may be increased when the service is improved to four-party, two-party or single party service.

- On the other hand, non-urban subscribers make a higher proportion of long-distance calls than urban ones, and these are profitable; so it is not clear to what extent, if any, rural subscribers are being cross-subsidized by urban ones.

- Upgrading to single party service would give rural business subscribers access to sophisticated new services, both voice and non-voice; this, in turn, could generate higher revenues for the Telcos.

(4) Available Evidence re Actual Industrial Impacts

- Almost every Telco is currently participating in a service extension and upgrading program, or has carried one out in the past. Some major examples are:

  - AGT's Rural Buried Cable Program, carried out over 1964-74 at an estimated cost of $100m.

  - Bell Canada's Non-Urban Service Improvement Program, extending from 1977-81, at an estimated cost of over $750m.

  - B.C. Tel's Supply of Service to Remote Areas, extending from 1974-81, at an estimated cost of $24m.

  - Sask Tel's Voluntary Assimilation Program, extending from 1977-83, at an estimated cost of $100m.

  - N.B. Tel's Rural Service Improvement Program extending from 1972-83, at an estimated cost of $60m.

- Bell Canada's N.U.S.I. program

  - Will add approximately 150,000 lines, create 665 new Local Rate Areas (LRAs) and affect 849 exchanges.

  - Will effectively more than double the capacity of its non-urban network and result in 61% of non-urban subscribers taking single or two-party service; up from 41% in January 1977.

  - Has resulted in substantial orders for Northern Telecom in terms of copper cable wires, and more modest orders for DMS-1 switches.

- The Northern Communications Assistance Program (NCAP) is a five year program, begun in 1977, under which DOC is providing some $7m to Bell Canada and Northwest Tel, the two common carriers in the Northwest Territories, to cover the capital costs of toll telephone links to all NWT communities. The two common carriers are contributing an approximately equal amount, over the same period, to cover the provision of local exchange facilities, as well as long distance and local operating costs.

Working Group

on the

Industrial Impacts of Communications Policies

Comments

by the

Government of Newfoundland and Labrador

August, 1980

Educational Broadcasting

The Government of Newfoundland and Labrador does not directly own or operate any radio, television or cable television broadcasting facilities. Government however, supports the development of educational broadcasting and its extension throughout the Province.

Educational broadcasting in Newfoundland and Labrador occurs primarily on two levels. Memorial University operates an educational television centre (ETV) which is primarily involved in program production and distribution, particularly of academic and general interest type programs. The ETV Centre has been instrumental in the development and operation of a unique programming package designed principally for general educational benefit and which is distributed by local CATV facilities. It is intended that this service be extended throughout the Province to be included as part of the program packages of the major CATV operations. Memorial University has actively participated in the experimental development of satellite technology. An emphasis has been directed towards the provision of health care benefits and of, off-campus courses, and continuing medical and other professional educational updating. Government recently supported Memorial in its activities in this area by providing a financial grant to assist with further experimental projects.

On a more limited scale the Department of Education produces and distributes through the facilities of the CBC, educational radio broadcasts for use in the elementary and secondary school systems.

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While the Province has not indicated any financial support for private organizations which are, or would plan to be involved in educational broadcasting, it has indicated on various occasions the importance it attaches to the development of an educational broadcasting system. This message has been conveyed to the CRTC on a number of occasions, and the Province strongly supports the inclusion of an educational channel in any programming package planned for distribution by Canadian domestic satellites.

Incentives for TV Program Productions

Direct incentives in the Province for the development of a TV program production industry has been very limited. While support is increasing for related activities and industries no direct financial incentives have been forthcoming for TV program production.

Network Interconnection

It is the policy of the Government of Newfoundland and Labrador to permit competition between the carriers of long haul telecommunications services where such competition will not negatively impact on the provision of normal telephone service, and it is in the public interest to permit such competition. In accordance with this policy Government, in 1973, supported the application of the Newfoundland Telephone Company to construct a province-wide microwave system which would be in direct competition with a system operated by CNT.

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The Province also jointly intervened in 1978 with Nova Scotia, New Brunswick and Prince Edward Island in the application by CNCP to interconnect its facilities with Bell Canada's. It is important to note that the intervention was not supportive or in opposition to the application but was primarily concerned with the effects that such interconnection might have on the erosion of revenues of the provincially regulated carriers which are responsible for the provision of local telephone service.

Terminal Attachment

It is the position of the Government of Newfoundland and Labrador to maintain a policy of no-interconnection of either non-network or network addressing devices. This position has been taken to ensure that connection of privately-owned devices do not deprive the provincially regulated telephone company of revenues which are used to subsidize the provision of basic telephone service to areas which are incapable of economically supporting the necessary infrastructure and associated maintenance and operational costs. Government has however, indicated its intention to continuously review this policy with a view to a more liberalized approach when it is determined that a basic level of telephone service has been provided to all areas of the Province.

Government is conscience of the benefits which competition for the provision of terminal devices may provide in terms of increased consumer choice, reduced costs and the resultant manufacturing effects. It was viewed therefore as a positive step when the Board

of Commissioners of Public Utilities in 1977 ordered the approval of attachment of selected answer-recording devices and the decision of the Telephone Company itself to permit the direct attachment of telephone sets significantly different than those offered by the Company.

With respect to attachment of terminal devices by the federally regulated carrier, Terra Nova Tel, Government has participated in the DOC Terminal Attachment Program being represented on the Advisory Committee.

Pricing of Monopoly and Competitive Telecommunications Services

Provincial policy as administered by the Board of Commissioners of Public Utilities with respect to the pricing of monopoly and competitive telecommunications services closely parallels the policy of DOC, namely:

- Value of service pricing and system-wide rate averaging.

- Relatively low residential rates to facilitate universal access to basic service.

- Separation of revenues from competitive and monopoly services to ensure that there is no cross-subsidization from monopoly to competitive services. Competitive services are however, not required to be included in the telephone company tariffs but revenues so derived are included in the rate base. Subsidization from competitive to monopoly services or cross-subsidization from within competitive services have not been discouraged.

Rate of Return Regulation

The Newfoundland Telephone Company, regulated by the Newfoundland Board of Commissioners of Public Utilities, and like all other major telephone companies in Canada is regulated in terms of rate of return (on rate base, common equity, etc.). Federal policy, as stipulated, restricts rate of return regulation to the provision of high quality basic telecommunications services. Provincially, policy with respect to rate of return regulation is extended beyond the provision of basic services. Throughout the franchise area served by the provincially regulated carrier basic telephone service has been provided in all but the smallest of coastal communities. Accordingly, such regulation while ensuring the financial viability of the Company, demands that in addition to the provision of access to basic services, that high quality optional services be available on demand.

Vertical Integration

The extent of vertical integration within the telecommunications industry has not resulted in specific provincial policies in this regard. However, the ownership relationship between the Newfoundland Telephone Company, Bell Canada and, NTC's major supplier of telecommunications equipment and apparatus, Northern Telecom, has not resulted in any expression of concern by the Newfoundland Board of Commissioners of Public Utilities.

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Northern Telecom, in Newfoundland, operates a small electronics component manufacturing plant. Should the current extent of purchasing from Northern Telecom by the Newfoundland Telephone Company be varied by a significant amount, it is possible that the economic feasibility of continuing to operate the manufacturing plant in this Province may be placed in some jeopardy.

Earth Station Licensing

The Government of Newfoundland and Labrador insists that the integrity of its provincially regulated telecommunications carrier must be protected in its continuing efforts to provide and maintain a high level of telecommunications services to all of its franchise area. It was basically for this reason that Government supported the proposal that Telesat Canada become a member of TCTS. However, the DOC 1978 revised policy on earth station ownership was welcomed by the Province as it was viewed as a means of expediting the extension of broadcast services to rural areas of Newfoundland and Labrador. At the 1979 Conference of Communications Ministers in Toronto, the Minister of Transportation and Communications indicated his support for the immediate licensing by the CRTC of TVRO's for the delivery of television services. The Province believes that such licensing should proceed as quickly as possible with incentives for the purchase of terminals manufactured in Canada.

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Extension/Upgrading of Service to Rural & Northern Communities

It is the position of the Government of Newfoundland and Labrador that extension of telecommunications and broadcasting services to rural areas must proceed as quickly as possible. Government supports a more liberalized licensing policy for the operation of satellite earth receiving terminals for the extension of radio and television services and has encouraged regulations to ensure that the telecommunications carriers are responsible in extending and upgrading services in rural areas. The Newfoundland Board of Commissioners of Public Utilities has maintained a continuous upgrading program for the Newfoundland Telephone Company on the island portion of the Province and in 1974, following the purchase from Bell Canada, ordered the Company to follow a detailed service improvement program for the upgrading of facilities in Labrador. Similar action in 1978 was taken by the CRTC for the general provision and upgrading of facilities in the franchise area of Terra Nova Tel. The Commission appears to have been influenced in its direction to the carrier by the results of a 1977 federal/provincial study on the quality of telephone service in the Province.

With respect to broadcasting, Government has participated in several studies designed to identify and propose solutions for the extension of broadcast services to rural areas. These studies involved a survey of broadcast coverage in the Province, a technical/economic proposal for the extension of the CTV service and a study of the extension of cable television service to rural areas. The

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Province, also supported the membership of Telesat Canada in the Trans Canada Telephone System and welcomed the 1978, DOC liberalized licensing policy for satellite earth station ownership. In this regard the Province is supportive of steps taken to increase the distribution of services by use of satellite earth receiving terminals.

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BROUILLON

COMMENTAIRES DU QUEBEC CONCERNANT L'IMPACT INDUSTRIEL DES POLITIQUES DES COMMUNICATIONS AU CANADA

PARTIE A

Cette première partie apporte un complément à l'information contenue dans le document du 2 mai 1980 intitulé: "L'impact industriel des politiques de télécommunications au Québec". Cette information est destinée à la partie II du document préparé par le gouvernement fédéral.

1. Radio et télévision éducatives

Comme l'indiquait le document déposé en mai, le gouvernement du Québec dispose d'une Loi sur la programmation éducative. Par cette loi, le ministre des Communications peut accorder une assistance financière ou technique aux entreprises de radio-télévision ou de câblodistribution dont la programmation a été déclarée éducative par la Régie des services publics du Québec. Comme le programme d'aide que cette loi rend possible n'a pas encore été établi, cette loi n'a pas encore eu d'impact. On peut prévoir toutefois que lorsqu'un tel programme existera, il aura des répercussions importantes sur la production et la diffusion d'émissions éducatives sur le territoire québécois. Une étude effectuée par une firme privée pour le compte du ministère des Communications du Québec estime pour sa part que les répercussions possibles se situeront aux environs de 2 7000 000$ par année.

2. La Société de radio-télévision du Québec (Radio-Québec)

En plus de produire un certain nombre d'émissions, la Société a pour politique d'encourager et de soutenir les producteurs québécois. Pendant l'exercice 1977-78, cette politique a permis la coproduction par des producteurs indépendants de documents audiovisuels d'une durée globale de quarante-deux heures, ce qui exige des déboursés représentant environ 12% des coûts directs de production.

La Société de radio-télévision éducative (Radio-Québec) a un budget annuel d'environ 40$ millions. Environ 1$ million par année va à des producteurs indépendants. Pour sa part Radio-Québec consacre environ 8.5$ millions à la production et emploie 320 personnes, dont 175 techniciens, 50 réalisateurs, 50 scripts, 40 recherchistes et 6 scénaristes. Sa portée hebdomadaire était au printemps 1979 de 800,000 personnes. La Société est assujettie à la politique d'achat du gouvernement du Québec qui vise à favoriser les producteurs du Québec.

3. Incitation à la production

En plus de la Loi sur la programmation éducative et de la Loi sur la Société de radio-télévision du Québec qui ont des impacts sur les activités de production, le Québec a édicté un règlement relatif à la télévision payante. Un des objectifs de ce règlement est d'aider au développement de l'industrie de la production audiovisuelle québécoise.

La création du réseau central que préconise le règlement et auquel doit faire partie toute entreprise de télévision payante est susceptible d'augmenter la production d'émissions au Québec. L'article 12 du règlement prévoit en effet que "le réseau central doit favoriser les éléments de production et de réalisation en opération dans le domaine audiovisuel et du spectacle au Québec". De plus, l'article 16 prévoit que "Le lieutenant-gouverneur en conseil détermine, à la fin de chaque année financière, la partie des revenus d'exploitation que le réseau central doit redistribuer à la production québécoise selon les normes établies par le ministre". Finalement, l'article 39 stipule que "La programmation doit comprendre en majorité des productions originales de langue française tout en privilégiant celles d'origine québécoise".

L'impact de ce règlement sur les activités de production ne peut être mesuré à l'heure actuelle puisque aucune entreprise de télévision payante n'est encore en exploitation au Québec actuellement. Toutefois on peut espérer que la création d'un réseau central contrôlé par des résidents

du Québec soit de nature à favoriser les productions québécoises et à faire profiter au maximum le Québec des retombées économiques de cette activité.

Plusieurs autres mesures prévues au règlement auront aussi des effets sur les activités de production au Québec, mais seule l'expérience nous dira leur ampleur.

4. Le raccordement de terminaux

La Régie des services publics du Québec qui exerce sa compétence sur seulement 10% des téléphones en territoire québécois, réserve, à quelques exceptions près, l'exclusivité de la fourniture des équipements aux entreprises de téléphone. Toutefois, comme l'indiquait notre document du 2 mai 1980, les déboursés des compagnies de téléphone sous compétence québécoise sont trop limités, pour que les politiques québécoises en cette matière puissent avoir un impact sur les activités de fabrication au Canada ou au Québec.

On peut toutefois affirmer que cette politique restrictive de la Régie a permis à de nombreuses petites compagnies de téléphone de survivre. Bien que leur volume d'achat ait été peu important, ces petites compagnies ont favorisé le producteur canadien Northern Telecom beaucoup plus sans doute que ne l'aurait fait les usagers sous une politique de raccordement plus libérale.

5. L'intégration verticale

Le problème de l'intégration verticale ne se pose pas pour les compagnies de téléphone sous compétence québécoise puisque aucune n'a de filiale qui oeuvre dans le domaine de la fabrication. Cependant, on note que ces compagnies de téléphone se comportent essentiellement comme les sociétés exploitantes du groupe Bell en s'approvisionnant en grande partie chez Northern Telecom, même si l'une d'elles fait partie de la grande famille G.T.&E.

PARTIE B

Cette partie du document contient des recommandations concernant certains des domaines identifiés comme prioritaires lors de la rencontre de Saint-Jean, Terre-Neuve. Contrairement à la partie A, qui portait uniquement sur les politiques du Québec, la partie B contient des recommandations qui s'appliquent à toutes les politiques de communications au Canada.

1. Radio et télévision éducatives

Les provinces qui ont compétence dans ce domaine devraient continuer à stimuler la production d'émissions de nature éducative. A ce titre, le ministère des Communications du Québec compte mettre en place très bientôt un programme d'aide à la programmation éducative. Le but de ce programme sera de stimuler la production d'émissions éducatives et de favoriser leur diffusion par les entreprises privées de radio-télévision et de câblodistribution du Québec.

2. Politiques concernant le contenu canadien

Les politiques du C.R.T.C. concernant le contenu canadien n'ont presque pas eu d'impact au Québec puisque les postes de télévision de langue française font plus que ne l'exigent les contingentements de l'organisme de réglementation. Devant cette constatation, il ne semble pas approprié de recommander un renforcement de cette réglementation. Il serait plus opportun de mettre l'emphase sur des mesures incitatives et stimulantes comme celles mises de l'avant dans la Loi du Québec sur la programmation éducative et dans son règlement relatif à la télévision payante dont nous avons parlé plus haut.

3. Raccordement des terminaux

Le ministère des Communications du Québec croit qu'il n'est pas dans l'intérêt public de permettre le raccordement aux réseaux publics de communications d'appareils aptes à contrôler le réseau. La raison fondamentale de cette position vient du fait qu'une politique libérale de raccordement de terminaux profiterait beaucoup plus aux manufacturiers étrangers qu'à ceux du Canada. Nous ne croyons pas que les

manufacturiers québécois ou canadiens autres que Northern Telecom pourraient concurrencer les fabricants étrangers. L'ouverture à tout venant du marché relativement vaste que permettrait une politique libérale de raccordement, risque donc de diminuer les activités de fabrication au Canada. Un tel développement n'est pas désirable d'autant plus qu'aucune étude n'indique avec quelque certitude que le public bénéficierait en longue période d'une telle politique en termes de coûts, de diversité et de fiabilité du service.

4. L'intégration verticale

La fabrication d'équipement de télécommunication est l'un des rares secteurs, où le Canada est autonome, tant au niveau de la production qu'aux niveaux de la recherche et du développement. Cette situation n'est pas étrangère aux liens qui existent entre Bell Canada, Northern Telecom et Bell Northern.

La nécessité d'un vaste marché pour financer les déboursés qu'exigent la recherche et le développement n'est pas à démontrer. L'étroitesse du marché canadien ne permet pas l'existence d'un haut niveau de concurrence entre firmes de taille suffisante pour engager les recherches que nécessite la mise au point des nouveaux produits de télécommunications. Le Canada doit donc choisir entre l'intégration verticale et l'existence d'une foule de petites firmes canadiennes soumises à la concurrence des grandes firmes étrangères.

Le potentiel canadien de concurrencer Northern Telecom consiste en une multitude de petites entreprises dont seulement quelques-unes effectuent leurs propres travaux de recherche et développement et ce, sur une base très restreinte. Ces entreprises sont plutôt complémentaires que réellement concurrentielles.

Sans intégration verticale, la concurrence proviendrait sans doute des géants multinationaux qui pourraient, le cas échéant, s'établir au Canada. Il faut aussi tenir compte du fait que l'idéal de concurrence entre les producteurs de différents pays est illusoire puisque les

pays d'origine des firmes multinationales qui viendraient s'établir au Canada, tout particulièrement l'Europe et le Japon, possèdent des structures industrielles en télécommunications qui rendent impossible la pénétration de leur marché par les entreprises canadiennes ou autres.

Devant cette situation et tenant compte tout particulièrement de l'étroitesse du marché canadien et de l'impossibilité d'une concurrence réelle avec la plupart des pays industrialisés, l'intégration verticale qui existe à l'heure actuelle apparaît nécessaire pour maintenir au Canada la compétence et l'autonomie dont il jouit dans le domaine des télécommunications.

Les petites entreprises de fabrication d'équipements ne doivent pas pour autant être négligées. Plusieurs s'accomodent bien du système actuel et leur rôle est plutôt complémentaire que concurrentiel.

Il y aurait lieu de prendre des mesures pour accroître le rôle complémentaire de ces petites firmes en exigeant par exemple que Bell Canada les favorise dans la mesure du possible. En somme, plutôt que d'abolir le lien vertical, il y aurait lieu de renforcer les petites firmes complémentaires qui peuvent, entre autres choses, oeuvrer dans les créneaux qu'une grande entreprise peut difficilement occuper.

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CONFIDENTIEL

REUNION FEDERALE-PROVINCIALE DES HAUTS FONCTIONNAIRES RESPONSABLES DES COMMUNICATIONS

(GROUPE DE TRAVAIL SUR LES INCIDENCES DES POLITIQUES DES COMMUNICATIONS SUR L'INDUSTRIE)

L'impact industriel des politiques de télécommunications du Québec

Québec

Fredericton

du 6 au 9 mai 1980

Gouvernement du Québec
Ministère des
Communications

L'IMPACT INDUSTRIEL DES POLITIQUES DE TÉLÉCOMMUNICATIONS DU QUÉBEC

Ce présent document a été préparé pour donner suite aux décisions prises à Québec le 7 février dernier, par le groupe de travail fédéral-provincial portant sur l'impact industriel des politiques de communications.

Essentiellement, il a été décidé que chaque gouvernement examinerait, pour chacun des secteurs qu'il occupe, les répercussions de ses politiques de communications sur les activités de production. Le présent document identifiera d'abord les secteurs que le Québec occupe (où il a compétence), et tentera par la suite de donner un aperçu de son poids économique et de déterminer s'il est suffisamment important pour exercer une influence quelconque sur les activités de production tant du software que de l'hardware. Nous examinerons aussi l'impact des politiques de communications du Québec sur la situation actuelle de l'industrie et nous terminerons en formulant des recommandations s'il y a lieu.

Ce document porte uniquement sur les activités ou les secteurs pour lesquels le Québec détient la juridiction, c'est-à-dire les secteurs pour lesquels il peut appliquer des politiques de communications. Il ne s'agit pas d'analyser l'ensemble des moyens que le Québec pourrait prendre pour influencer plus ou moins indirectement les activités de production sur ce territoire. Dans un premier temps nous voulons uniquement analyser les politiques de communications qui existent ou qui pourraient être mises sur pied pour réglementer les secteurs dont la compétence relève du Québec. Par exemple il est peut-être possible pour le Québec d'influencer d'une façon quelconque la câblodistribution au Québec, mais depuis novembre 1977, la Cour suprême du Canada ne lui permet plus d'intervenir directement. Par conséquent, aucune politique québécoise de communications peut influencer ce secteur et il sera donc exclu du présent document.

1. LES SECTEURS QUE LE QUÉBEC OCCUPE

1. a) La téléphonie

La Régie des services publics du Québec a juridiction sur une vingtaine de petites compagnies de téléphone qui n'exploitent que 10% des appareils téléphoniques au Québec. Les plus importantes parmi celles-ci sont Québec-Téléphone avec 253,854 appareils en 1978 et Télébec avec 138,535 pour la même année.

....2

Le CRTC, organisme fédéral, a juridiction sur 90% des téléphones situés en territoire québécois.

Les compagnies de téléphone sous juridiction provinciale offrent également d'autres services, tels le Telex, le TWX et la transmission de données.

1. b) La radio et la télévision éducatives

La juridiction du Québec dans le secteur de la radio et de la télévision éducatives n'est pas complète puisque les sociétés qui oeuvrent dans ce secteur doivent se présenter devant le CRTC pour l'obtention d'un permis. L'aspect technique d'une entreprise de télévision ou de radio éducative relève de la compétence fédérale. Seulement le contenu éducatif est de compétence provinciale et nous nous attarderons donc uniquement aux politiques de communications concernant le contenu qui pourraient avoir des répercussions sur la production de software et la fabrication d'équipements.

1. c) La téléinformatique

La téléinformatique comprend deux éléments : les télécommunications et l'informatique. Comme le présent document porte sur les politiques de communications, nous nous limiterons au premier élément qui comprend essentiellement les facilités de communications nécessaires à la téléinformatique. Ces facilités sont offertes par les compagnies de téléphone et par les Télécommunications du CN/CP. Le Québec a compétence sur ce secteur dans la mesure où il a compétence sur les transporteurs publics, c'est-à-dire les quelque vingt compagnies de téléphone sous compétence québécoise.

1. d) La télévision payante

Le Québec se reconnaît une compétence sur la télévision payante en autant qu'il s'agit d'un service en circuit fermé. Sa compétence s'étend à l'ensemble des activités et installations nécessaires à la fourniture du service.

1. e) Télétextes, vidéotextes et autres terminaux

La question de compétence sur ces nouveaux services n'a pas encore été résolue. Toutefois, il faut reconnaître que la question des terminaux est intimement reliée à l'exploitation des réseaux de communications : téléphonie, câblodistribution et radiodiffusion. A moins que l'on interdise à ces sociétés de développer, de devenir propriétaires et d'exploiter de tels terminaux, il est fort probable qu'elles jouiront d'un avantage qui défavorisera sérieusement les autres concurrents possibles. D'ailleurs l'expérience passée tente de démontrer que ce sont surtout ces entreprises qui envahissent le secteur : Bell Canada, Télécâble Vidéotron, etc. Il serait donc illusoire de prétendre avoir compétence sur les terminaux rattachés à des réseaux régis par un autre niveau de gouvernement.

1. f) La bureautique

La bureautique est le terme utilisé pour désigner l'ensemble de l'équipement utilisé dans les bureaucraties publiques et privées. Ce secteur se développe actuellement de telle sorte que, de plus en plus, les équipements de bureau sont équipés de mémoires et de micro-processeurs ainsi que reliés aux réseaux de communications. L'exemple le plus frappant est le remplacement du dactylographe traditionnel par une machine pour traiter les textes reliée au réseau de transmission et capable par le fait même d'assumer certaines fonctions "postales".

Encore ici, les politiques de communications qui peuvent influencer le développement du secteur sont celles qui portent sur les réseaux de communications qui eux sont sous compétence fédérale.

En résumé, le Québec a compétence sur 10% de la téléphonie au Québec et sur le contenu de la radio et télévision éducatives ainsi que sur la téléinformatique et les terminaux de toutes sortes en autant qu'il a compétence sur les réseaux de transmission auxquels ils sont rattachés. Dans la section qui suit, nous tenterons de définir l'état actuel des activités de fabrication dans chacun des secteurs que le Québec occupe.

2. ÉTAT DES ACTIVITÉS DE FABRICATION OU DE PRODUCTION

Nous ne disposons d'aucune statistique ventilée selon les secteurs que nous avons retenus pour ce document. Les seules statistiques disponibles sont celles qui ont trait à tout le secteur des télécommunications. En 1976, la valeur des expéditions de ce secteur au Québec s'élevait à $387,290,000 et représentait 28% du total canadien.

L'industrie des télécommunications au Québec est très marquée par la présence de Northern Telecom qui à elle seule produit un pourcentage élevé des expéditions totales du Québec.

Les activités de fabrication de radiorécepteurs et de téléviseurs ménagers sont pour leur part presqu'inexistantes. En effet statistique Canada rapporte pour 1977, seulement 115 travailleurs dans ce secteur pour des livraisons totales de $8,678,000.

3. L'IMPACT PASSÉ DES POLITIQUES DE COMMUNICATIONS DU QUÉBEC

Comme indiqué plus haut, le Québec a compétence partielle en téléphonie, en télévision payante et en radio-télévision éducative. Avant de mesurer l'impact passé et les répercussions possibles futures des politiques de communications, il importe d'établir le poids économique absolu et relatif des sociétés sous compétence québécoise.

3. a) Les équipements utilisés par les compagnies de téléphone sous compétence québécoise

La demande en biens et services des compagnies de téléph consiste en pièces d'équipements, ainsi qu'en véhicules et en b ments de toutes sortes. Les données dont nous disposons partielles mais quand même suffisantes pour donner une idée volume de la demande en matériel de communications. Les dépe pour des véhicules ou pour des immeubles ne nous intéressent pas En effet il est difficile d'imaginer des politiques de communicat qui puissent avoir un effet important sur les activités de fabrica reliées à la production de véhicules et à la construction d'immeubl

Les immobilisations effectuées par Québec-Téléphone au cours l'exercice financier 1978 s'élevaient à $46.4 millions. Le chi correspondant pour Télébec est de $18.9 millions. Il est impos d'après les données que contiennent les rapports annuels, d'éta avec exactitude la somme qui a été affectée à l'achat d'équipem mais il est certain qu'un pourcentage considérable est allé à l'acha véhicules, de poteaux, et d'immeubles ainsi qu'à des coûts de m d'oeuvre et autres frais d'installation.

Une autre source d'information peut nous aider à établir un ordre grandeur des dépenses en équipement de télécommunication compagnies de téléphone sous compétence québécoise. Il s'agit données fournies par les principales compagnies de téléphone Canada et contenues dans Les principaux télécommunicateurs Canada : Dépenses au titre du matériel de télécommunication, 1 1982. Ces données excluent "les dépenses ayant trait aux terra aux édifices et aux véhicules". En supposant que les compagnie téléphone sous compétence québécoise dépensent annuellemen même montant par téléphone en service que l'ensemble des com gnies du Québec et de l'Ontario, on peut estimer, à partir des donn fournies par la publication mentionnée plus haut, qu'elles ont dépe en 1977 pour l'acquisition d'équipement de communication envi $27.9 millions. On obtient ce chiffre à partir des dépenses totale équipement ($931.1 millions) effectuées en Ontario et au Québec 1977 et en le modifiant pour tenir compte du fait que 25% de ce somme consiste en coûts attribuables "à la main-d'oeuvre nécessai la mise en exploitation de certains appareils" et du fait que téléphones sous compétence québécoise ne représentent qu'envi 4% du total des téléphones totaux en service au Québec et Ontario.

A partir de ces deux sources de données, nous estimons que dépenses des compagnies de téléphone sous compétence québéc pour l'acquisition de matériel de communications, se situent environs de $30 millions par année.

Connaissant la complexité des équipements de communications et l'ampleur des recherches que nécessite leur mise au point, il est assez évident que les dépenses des compagnies de téléphone sous la compétence du Québec ne constituent pas un levier important. Il faut donc conclure que les politiques québécoises en téléphonie ne pouvaient pas dans le passé et ne pourront pas dans l'avenir (si les conditions présentes persistent) avoir d'effet significatif sur les activités de fabrication au Canada ou au Québec.

3. b) La téléinformatique

Les seules politiques de communications qui peuvent avoir des répercussions sur la téléinformatique sont celles touchant les réseaux de transmission qui appartiennent en presque totalité aux membres du Réseau téléphonique transcanadien et aux Télécommunications du CN/CP. Les services offerts par les compagnies de téléphone sous compétence québécoise sont avant tout l'extension des services offerts par les grands transporteurs canadiens. Dans un tel contexte, l'impact potentiel des politiques que le Québec pourrait se donner dans ce domaine est très limité.

3. c) La radio-télévision éducative

La Loi sur la programmation éducative du Québec a été sanctionnée le 27 novembre 1979. Elle autorise à l'article 10 le ministre des Communications à "accorder une assistance financière ou technique aux entreprises de radio-télévision ou de câblodistribution dont la programmation a été déclarée éducative par la Régie". Le projet de réglementation présentement à l'étude prévoit que l'assistance financière ne sera accordée qu'à la production ou à la diffusion d'émissions québécoises. Si cette réglementation est acceptée, elle aura pour effet d'encourager les activités de production d'émissions sur le territoire québécois.

La loi de la Société de radio-télévision du Québec contient certaines dispositions susceptibles de stimuler les activités de production de contenu sur le territoire du Québec. En effet "la Société a pour objet d'établir, de posséder et d'exploiter un service de production de documents audio-visuels et de radio-télévision". Cette loi prévoit aussi la création de comités régionaux qui aient entre autres fonctions celle "d'assurer la production d'émissions pour cette région".

En plus des nombreuses émissions que produit l'Office de radio-diffusion du Québec, il a participé pendant l'exercice 1977-78, dans le cadre de sa politique d'encouragement et de soutien aux producteurs québécois, "à la co-production de documents audio-visuels d'une durée globale de quarante-deux heures".

En somme la Loi de la Société de radio-télévision du Québec ainsi que les politiques adoptées par la Société visent à stimuler la production d'émissions au Québec. Contrairement à d'autres sociétés de radio-diffusion, l'Office a un programme visant à encourager les producteurs indépendants québécois.

4. LES NOUVEAUX SECTEURS

4. a) La télévision payante

Le Québec a compétence sur la télévision payante en autant qu'elle se fait en circuit fermé. Les systèmes qui se développeront d'une autre façon ne seront pas sous compétence provinciale. Comme il s'agit d'un moyen de communication qui n'existe pas encore au Québec, on ne peut que faire de prévisions sur l'impact qu'il pourrait avoir sur les activités de fabrication et de production.

La politique et la réglementation actuelles ne contiennent aucune disposition susceptible de stimuler la fabrication d'équipements de communications au Québec ou au Canada.

Comme la télévision payante en circuit fermé se ferait sans doute sur les réseaux de câble déjà installés (1), les équipements nouveaux qui seraient nécessaires sont surtout ceux ayant pour fonction de fournir les renseignements nécessaires à la facturation des abonnés ou d'exclure les non-abonnés.

Bien que les modalités d'exploitation d'un éventuel système de télévision au Québec ne soient pas encore connues, on peut mentionner deux facteurs qui auront tendance à limiter l'impact des politiques de télévision payante sur les activités de fabrication d'équipement en territoire québécois.

1) La télévision payante en circuit fermé au Québec constituera selon toute vraisemblance un marché fort limité et ce pour plusieurs années à venir. La demande que pourraient influencer les politiques québécoises en la matière sera insuffisante pour avoir des effets déterminants sur les activités de fabrication.

2) La télévision payante se développe ailleurs depuis plusieurs années et les fabricants étrangers auront pris, lorsque le service sera introduit au Québec, une avance technologique importante qui désavantagera nos fabricants nationaux.

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1) Les opérations de télévision payante nécessitant l'installation d'un câble coaxial à cette fin risquent fortement de ne pas être rentables.

Du côté de la programmation, la politique québécoise est plus exigeante. En effet, l'article 39 du règlement concernant la télévision payante se lit comme suit :

> "La programmation doit comprendre en majorité des productions originales de langue française tout en privilégiant celle d'origine québécoise".

Cette disposition vise essentiellement à maximiser les retombées de ce nouveau service sur la production de contenus. Seule l'expérience pourra établir l'efficacité d'une telle mesure.

4. b) Les autres secteurs nouveaux

Il s'agit essentiellement des systèmes vidéotextes, télétextes et des autres terminaux domestiques ou commerciaux. Mais comme nous l'avons indiqué plus haut, les principales sinon les seules politiques de communications qui peuvent avoir un impact sur le développement de ces systèmes sont celles concernant les réseaux auxquels sont rattachés ces terminaux. Ces réseaux sont presque exclusivement sous compétence fédérale.

5. RECOMMANDATIONS

Le seul domaine où la compétence provinciale peut exercer une influence significative est celui du contenu de la télévision payante. Mais déjà le règlement contient des dispositions suffisantes. Dans les autres domaines, le Québec a besoin d'une compétence plus étendue pour être en mesure d'élaborer des lois ou règlements susceptibles d'influencer positivement les activités de production et de fabrication..

Québec, le 2 mai 1980.

Ontario's Policies for Input to Appendix 2

Broadcasting and Cable

1. Advertising Regulations

(1) Ontario Policy

Apart from restrictions on the advertising of liquor products Ontario does not have in place policies on advertising on either cable or broadcast operations. Ontario notes that some provinces have implemented special taxes on broadcast advertising and the federal government has numerous regulations dealing with:

- advertising content
- advertising on foreign broadcast stations
- restrictions on the use of advertising

(2) Industrial Impact

Taxes on broadcast advertising are unlikely to have significant impact on either software or hardware. These taxes are primarily revenue raising measures and are passed on to the buyer of air time. While smaller users might be crowded out, revenues accruing to broadcasting are unlikely to vary.

Advertising content regulations could stimulate the Canadian program production industry to the extent that advertising cannot be entirely improved. Tax restrictions on advertising on foreign stations should increase the revenues available to broadcasters for investment in Canadian software. In the same vein, restrictions on the use of advertising by cable also are intended to protect and enhance the revenues available to broadcasters for Canadian program production.

Ontario, and in particular, Toronto broadcasters have benefitted significantly from the advertising tax measure. However, positive impacts on software production have been limited. Evidence clearly indicates that broadcasters have used their protected revenues to bid up the prices for U.S. programs and not to increase the quality and quantity of the Canadian programs they deliver. Clearly, this measure will be of little cultural-industrial merit until effective Canadian content quotas are set in place.

Restrictions on advertising on cable are of equally questionable value. As noted above, increases in broadcaster revenues do not seem to result in positive software impacts. Moreover, these restrictions actually could limit or constrain positive software and hardware impacts to the extent that advertising on cable could appeal to a whole new class of users interested in video advertising but unable or unwilling to pay the rate asked by the networks and local stations.

2. Establishment of Educational Television Broadcasting Stations

(1) Ontario Policy

The Ontario Educational Communications Authority (OECA) was set up as an independent corporation to deliver educational program material in Ontario. OECA has set out as its primary policy goal:

> " to utilize electric and associated media to provide educational opportunities for all people in Ontairo where the use of such media will complement the educational opportunities being offered by other agencies, or alternatively will provide educational opportunities not otherwise available to such organizations in attaining social and educational goals'.

In meeting this broad policy goal, OECA operates a broadcast network, provides a videotape delivery service and distributes program utilization or support material.

(2) Industrial Impact

Given the broad scope for OECA activities, it is reasonable to expect that it would have considerable hardware and software impact with respect to:

- the production and acquisition of programming, in terms of in-house production and independent program producers;
- the technology to operate a broadcast network, in terms of the domestic electronics industry and domestic carriers;
- non-broadcast communications technology with educational applications, in terms of electronic manufacturers, Telidon etc.

In 1979, OECA had almost $18 million before depreciation in fixed assets. Of this, electronic hardware -- e.g., production and broadcast distribution facilities -- accounted for 78% or $13.8 million. It is impossible to determine the exact amount spent by OECA on Canadian produced hardware, but presumably this would be rather small.

Total revenues to OECA in 1979 equalled $24 million, of which 85% or $20.4 million accrued directly from government grants. The remaining 15% or $3.6 million was derived from sales and co-productions.

66% of these revenues or $16 million were spent on program production, acquisition and utilization of programs. Acquisitions were limited and primarily of foreign origin. OECA produces most of its programs in-house, hence its impact on the independent program production industry is limited, if not non-existent. These expenditures also include small expenditures on non-broadcast communications technology. The videotape delivery service consumed only $670,000 or 3% of revenues. This would have limited impact on domestic electronics and electronic supplies manufacturers, not only due to the small amount of revenues expended but also due to the foreign origin of most equipment.

Finally, the remaining 31% of revenues or $7.69 million were spent on administration, maintenance of the network and advertising. These expenditures would include limited expenditures on electronic equipment and considerably larger expenditures to lease carrier capacity. Expenditures on both hardware and software can be expected to increase as OECA continues to market specialized educational program packages and continues its videotext experiments.

OECA captures an approximate 1%-2% share of audience in Ontario.

3. Incentives for Program Production

(1) Ontario Policy

Specific incentive measures for television program and theatrical film production sponsored by OECA, the Ministry of Culture and Recreation, the Arts Council of Ontario, and the Ministry of Industry and Tourism follow this paper, along with an assessment of the industrial impact of each.

In addition, Ontario believes that the 100% Capital Cost Allowance should be extended to all television programs with the amount of the tax writeoff based on the "box office" performance of the program and the amount of Canadian content. This policy would lead to a significant increase in the supply of Canadian television programs.

(2) Industrial Impact

The film incentive policies set out below provide both direct and indirect support to the development of Canadian program and film production. By reducing the risk involved in investment, the policy with respect to the C.C.A. should increase production of Canadian television programs. Furthermore, basing the amount of the tax writeoff on the "box office" performance of a program should ensure better distribution of Canadian programming.

EXISTING INCENTIVES RE: TV PROGRAM AND THEATRICAL FILM PRODUCTION - ONTARIO

AGENCY	INITIATIVE	NATURE OF SUPPORT	NATURE OF BENEFIT re: INDUSTRIAL STIMULATION
OECA MCR	- regular program production	- contracts (70% of program production is 'contracted out')	- direct, residency or nationality requirements absent
MCR	- film festival support . Festival of Festivals . Academy of Canadian Cinema . The Animation Festival	 $50,000 (approx.) $50,000 (") $40,000 (")	- indirect (i.e. visibility, exposure for Canadian talent)
	- Wintario "matching grants", SHORT FILMS only (15-20 minutes)	- 50% of the films costs if private financing has been previously identified	- direct (stimulation of cultural industries has not been identified as a Wintario objective) - residency/nationality would be considered
Arts Council of Ontario	- film festival support . The Super '8' Film Festival	 $5,000	- indirect (i.e. visibility, exposure for Canadian talent)
	- grants to individual artists via open competition . Senior film-maker award . Junior film-maker award . Senior photographer award . Video artist award . Screenwriter award	 $25,000 $10,000 $3,000-5,000 $3,000 $4,000	- indirect (i.e. individuals acquire funds to finance artistic/cultural ventures. Experience is gained (thus assisting the individual in meeting CFDC criteria). Grants are not awarded on the basis of anticipated marketability.)

APPENDIX

EXISTING INCENTIVES RE: TV PROGRAM AND THEATRICAL FILM PRODUCTION - ONTARIO (cont.)

AGENCY	INITIATIVE	NATURE OF SUPPORT	NATURE OF BENEFIT re: INDUSTRIAL STIMULATION
Arts Council of Ontario (cont.)	- grants to film industry agencies . Council of Canadian Film Makers - operations - research . Canadian Film Distribution Centre	 $10,000* $ 7,500 (approx.) $ 5,000 (approx.)	- indirect (i.e. does not finance productions or distribution)
MIT	- film location assistance . promotes Ontario's locations . advertises in foreign countries and trade magazines . provides initial film location by assisting film-makers in their choice and providing some transportation	- support services	- indirect
	- export program . sponsors trade shows . provides equipment and booths, and purchases 'spaces' for Ontario producers at distributors re the above	- facilitating role	- indirect
	- promo luncheons, the † Festival of Festivals	- goodwill	- indirect

* The Arts Council of Ontario is funded by MCR and enjoys a close working relationship with that Ministry. One aspect of this relationship is the assumption of operations grants or "core funding" (to agencies which have become regular ACO clients) by MCR in order to free ACO's allocated monies for the sponsorship of purely artistic endeavours.

† MIT also enjoys a close working relationship with MCR (which coordinates MIT contributions to any such Festivals).

4. Telecommunications and Computer/Communications

(1) Ontario Policy

The policy positions of the Ontario Government respecting telecommunications and computer communications are to be found in the legislation pertaining to the regulation of the independent telephone industry in the province as well as in representations made by Ontario in respect of issues largely under the jurisdiction of the federal government, but of fundamental concern to the people on Ontario. The Ontario Government recognizes the central role played by telecommunications in maintaining a positive economic and social climate within the province. Ontario is also cognizant of the need to protect and maintain the national telecommunications infrastructure while ensuring the timely introduction of new services into the market.

Ontario's policies as embodied in the Telephone Act reflect the largely rural nature of the systems under its jurisdiction; many of the issues which face Bell Canada, the major carrier operating within the province, are as yet to confront the independent industry. In these areas, representations to federal inquiries and at federal regulatory hearings reflect more comprehensively the Ontario Government position respecting the future development of the telecommunications network in Ontario and Canada.

1. Network Interconnection

(1) Ontario Policy

Under the Telephone Act, all network interconnection agreements must be approved by the provincial regulator, with due consideration for the integrity of the network and the public interest.

The major forum for provincial input into the development of interconnect policies affecting federally-regulated carriers has been the CNCP Interconnect case. As expressed during the hearing proceedings, Ontario's basic position is that the monopoly/competitive distinction in Ontario should be drawn at the boundary between the switched voice network, with basic services being provided on a monopoly basis and non-basic services being provided competitively.

The objectives for service provision in each case are different; universal availability is the underlying goal in the provision of basic service, with cross-subsidization between services a major tool for realizing this objective. In contrast, for non-basic services Ontario sees as appropriate for the province a diversity of suppliers in order that consumer choice and responsiveness to innovation be encouraged. In recognition of the benefits realized by competitive service users in having access to the local switched network, compensation should be paid by competitive service users to the monopoly service providers.

Ontario continues to participate in interconnect policy development through the Federal/Provincial Working Group on Competition Industry Structure and is refining its position on an ongoing basis.

(2) Industrial Impact

Ontario sees two basic areas of impact. There may be some increase in the volume of imports of foreign hardware should non-monopoly service providers purchase a greater proportion of their equipment from foreign sources. This could adversely affect Canadian suppliers. However, this must be balanced against the benefits to other Canadian suppliers of both hardware and software who have access to a more competitive and open market and to users who have access to more innovative and responsive suppliers and who may benefit from decreased costs and greater flexibility in acquiring equipment.

2. Terminal Attachment

(1) Ontario Policy

The Telephone Act specifies that telephone systems shall own and maintain all equipment operated in connection with the system, except by consent of the regulator. Exceptions to date have been limited to cases where carrier and customer have been in mutual agreement as to the advisability of customer ownership and maintenance because of the specialized nature of the equipment.

As a participant in the Terminal Attachment Program (TAP) Ontario has endorsed the development of technical standards for both non-network addressing (NNA) equipment and network addressing (NA) equipment.

It is the position of the Ontario Government that attachment of NNA equipment should proceed under a certification arrangement. Ontario has reserved its judgement on the question of interconnection of NA equipment subject to the evidence to be presented at the CRTC hearing to be held in the Spring of 1981. Ontario is concerned that terminal interconnection be undertaken in such a manner as to ensure the economic and technical integrity of the present telephone network, and to protect the Canadian equipment manufacturing industry from unfair foreign competition while enabling the user the flexibility required in a fast-changing environment. Accordingly, Ontario has petitioned the Governor-in-Council to permit the connection of equipment to Bell Canada's network only from those countries which allow Canadian-manufactured equipment to be similarly imported and connected.

(2) Industrial Impact

Evidence available from the United States suggests that the consumer will benefit from product innovation and increased choice arising out of a competitive environment in terminal attachment. However, such competition will present a considerable challenge to the electronics industry in meeting the demands of consumers who will not be bound by the traditional purchasing patterns of large carriers and whose marketing decisions will strongly reflect price and feature considerations.

The direction of technical evolution of terminals appears to favour incorporation of network addressing capabilities into intelligent terminals capable of processing functions. This development poses a

Underlying the anticipated pressure to innovate is the expectation that competition is likely to stem from an influx of foreign imports following a liberal terminal attachment policy, rather than from growth and expansion of the fledgling Canadian industry.

While the existence of competition could spur Canadian industry to greater innovation and productivity, if non-tariff barriers in other countries continue to prevent Canadian firms from exporting there may be no export potential to compensate for the loss of the domestic market. In any case, the adjustment period may be expected to be difficult, judging from the American experience.

3. Pricing of Monopoly and Competitive Telecommunications Services

(1) Ontario Policy

Under the Telephone Act, the regulator must approve all rates. However, the Telephone act does not specify any constraints on the rate setting perogatives of the regulator. In practice the Bell Canada tariff structure has served as a model for the independent systems.

The independent systems do not provide competitive services as such, but lease the local loops for services such as TWX and Telex to Bell and CNCP.

Ontario supported the interim use of incremental costing for provision of new services in Phase II of the Cost Inquiry. The Ontario Government is concerned that, whatever the outcome of the Cost Inquiry, monopoly services should not subsidize competitive services.

(2) Industrial Impact

The direct impacts of pricing policies for telecommunications services are two-fold. Demand elasticity dictates the price level at which optimum level of output in economic terms can be expected. Overpricing of services will depress demand and will discourage consumers from employing the optimal amount of communications technology in the interests of efficiency and productivity. Under-Balanced against the strictly economic arguments are the social considerations which have traditionally led to over-production of basic service on a non-compensatory basis.

In the future the availability of low-cost, innovative and responsive telecommunications services will be increasingly critical to economic and social development, necessitating a pricing policy capable of providing a wide variety of specialized services. At the same time the monopoly sector must be capable of maintaining the integrity of the basic network.

4. Rate of Return Regulation

(1) Ontario Policy

The Telephone Act specifies rate of return as the basic method of revenue requirement determination for independent telephone systems and that the regulator approve depreciation schedules on a company by company basis. As part of rate of return regulation the regulator has begun to investigate the issues of rate base determination, for the purpose of revenue calculation. In general, the commission has adopted an asset rate base excluding unrelated subsidiaries for its revenue need calculations.

Ontario has supported the CRTC Decision respecting depreciation and rate base determination as expressed in its Decision 78-1 on accounting and financial matters. Ontario's general concern in the application of rate of return methodologies is that the efficiency of the capital investment be monitored (to prevent A-J. effect) and that the depreciation methods not create a tendency to avoid modernization.

(2) Industrial Impact

Rate-of-return, as the basic determinant of profitability in a regulated undertaking, has a direct impact on carrier financing capabilities and expansion programs. Inherent in rate-of-return regulation is the danger of inefficiency due to over-capitalization. This can be further exacerbated by improper depreciation rates which may inflate the rate base and result in utilization of outmoded equipment.

From the perspective of the equipment manufacturing industry, under-depreciation and over-capitalization are beneficial to the extent that they increase revenues and permit faster expansion, but harmful to the extent that they discourage replacement of old equipment. From a public policy and economic efficiency perspective these tendencies are not beneficial to the monopoly network subscribers.

Appropriate depreciation rates and rate bases will be essential if regulated carriers are to compete fairly in the provision of new competitive telecommunication services.

5. Vertical Integration

(1) Ontario Policy

The present Telephone Act does not refer to the issue of vertical integration nor has such a situation arisen within the jurisdiction of the Province.

The Ontario Government has been a participant in the RTPC proceedings. it is Ontario's position that unless the proceedings result in strong evidence of a negative impact on the Canadian economy due to vertical integration, the present tri-corporate structure should be maintained.

(2) Industrial Impact

There is a considerable controversy over the impact of vertical integration on the telecommunications sector. Proponents of vertical integration claim efficiencies in R&D and production stemming from the close coordination possible between purchaser and manufacturer/designer. Opponents argue that innovation is retarded by vertical integration due to lack of competition and that higher prices and less variety result from such buying arrangements in the case of monopoly providers of telecommunications services.

In the Canadian context proponents argue that vertical integration has enabled Northern Telecom to become a technically efficient worldwide manufacturer of equipment by guaranteeing it the Bell Canada market. Opponents argue that this relationship has cost subscribers to the monopoly network due to lack of price competition:

Restricting vertical integration would open up large sectors of the Canadian market to other manufacturers. Where these are Canadian, the economic benefits of competition both to the consumer and the manufacturing industry may be considerable. The danger lies in the possibility that the decrease in vertical integration could favour foreign imports, a benefit to customers at the expense of the formerly integrated Canadian producers.

Without some controls over the influx of imports there is no guarantee that competition will favour the Canadian telecommunications equipment industry in the long term. Policies must be adopted which encourage the development of smaller innovative manufacturers while protecting Canada's technological sovereignty in this area.

6. Earth Station Licensing

(1) Ontario Policy

Ontario's position on earth station ownership is part of its larger concern respecting satellite policy in Canada. In its submission to the CRTC entitled "Canadian Satellites Should Be Used" this government stressed the need to ease access to the satellite carrier for a wide class of users and to increase competition between Telesat and terrestrial carriers. Ontario supports the reduction of restrictions on satellite earth station ownership; such a move should be accompanied by moves to open up access to Telesat and to eliminate the restrictive and discriminatory aspects of its tariffs.

(2) Industrial Impact

Apart from the increased market for earth stations which would result from a further easing of restrictions on the ownership of satellite earth stations, the resulting increased access to satellite facilities would enable their use by a wide variety of users such as television networks and value-added carriers. This would make more of these services available to residential and business users, reducing the pressure to allow the entry of U.S. specialized common carriers.

The impact of an enlarged market on the manufacturing sector would depend on the ability of the Canadian industry to compete with its well developed foreign counterparts.

7. Extension/Upgrading of Service to Rural and Remote Communities

(1) Ontario Policy

The Telephone Act was designed as a response to the need for service in rural areas in Ontario; specific corporate structures were developed to respond to unique financial and service requirements of these farm communities. Today the communities served by the independent systems are no longer "remote" but maintaining and upgrading services remains a major objective of the regulator in carrying out its responsibilities.

Ontario supports a policy that basic telephone service be universally available throughout the province. The Remote Northern Project, which involved the Ontario Government, Ontario Northerland and Bell Canada was major service extension project focusing on the area north of the 50th parallel remote Ontario.

In its submissions at Bell Canada rate hearings, the Ontario government has consistently supported rural service upgrading programs including the almost completed NUSI project.

(2) Industrial Impact

Given the present rate structures, the burden of rural service improvements can be expected to fall on non-rural subscribers. Such improvements encourage decentralization of economic development in addition to improving the quality of life in remote and rural areas.

The programs of the major carriers in the areas of rural up-grading have an impact on overall provisioning requirements and therefore on the equipment manufacturing sector. To the extent that such programmes are creating a demand for innovative technology they may provide a basis for Canadian industry to develop a new area of expertise for foreign export.

(10) Advertising Regulations: (Radio & TV)

In Manitoba, this topic is covered under the Liquor Control Act, which empowers the formation of regulations, in this case L160-R10 (attached) and dated December 30, 1973.

In L160-R10 paragraph 6(c) it is stated that radio and television ads are restricted to beer and wine only between 10 p.m. and 7 a.m.

It should be mentioned, also, that at the end of L160-R10, under Note 3 is stated: "Requests for approval of a manufacturer's advertisement for broadcasting by radio or television should be accompanied by confirmation that the advertisement has been approved by the Board of Broadcast Governors."

MANITOBA

DOCUMENT: 840-18[illegible]/c/9

CONFIDENTIAL

FEDERAL-PROVINCIAL MEETING OF SENIOR OFFICIALS

RESPONSIBLE FOR COMMUNICATIONS

(WORKING GROUP ON INDUSTRIAL IMPACTS OF COMMUNICATIONS POLIC

The Impact of Manitoba's Provincial Communications Policies on the Manufacturing Sector of the Telecommunications Industry

Manitoba

Freder[illegible]

May 6 to 9,

DOCUMENT: 840-194/022

CONFIDENTIAL

FEDERAL-PROVINCIAL MEETING OF SENIOR OFFICIALS

RESPONSIBLE FOR COMMUNICATIONS

Working Group on Industrial Impacts of Communications Policies

Manitoba's Response to Part 2

(Review of Communications Policies and Practices and their Industrial Impacts)

St. John's, Newfoundland
September 30-October 3,1980

(1) Educational Broadcasting:

Manitoba's broadcasting interest has been restricted mainly to co-production with the CBC and the broadcasting of the programs over CBC transmitters. This does not, however, indicate that Manitoba wishes to relinquish its right to get into broadcasting; nor does it waive the province's right, or its agency's right, if such an agency be established, to preferential spectrum.

(2) Incentives for TV program Production:

Manitoba's incentives are, primarily, enhanced through aid to cultural and educational institutions which, separately, have the option of using provincial grants for productions of various sorts -- i.e., cultural festivals, heritage programs, etc.

(3) Network Interconnection:

In Manitoba, the network is the Manitoba Telephone System which provides the basic delivery system -- microwaving of tv, telephony, ownership of cable distribution equipment, ownership of ground satellite stations, etc. -- and therefore does not leave much room for other carriers to operate, unless it is for the delivery of special services rather than as a competing common carrier.

However, applications by competing common carriers for network interconnection can be taken to the Public Utilities Board.

(4) Terminal Attachment:

In Manitoba, certain terminals (i.e. telephone sets, etc.) are provided by the Manitoba Telephone System, as well as other terminals of a similar nature and need. But the complete interconnection field is not closed. Some instruments, with standard approval, may be approved for attachment on application to the Public Utilities Board if it is decided the attachment will not harm the economic viability or technical operating capability of the primary delivery system.

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THE IMPACT OF MANITOBA'S PROVINCIAL COMMUNICATIONS POLICIES ON THE MANUFACTURING SECTOR OF THE TELECOMMUNICATIONS INDUSTRY

Because of the technological nature of modern communications, it is vi inevitable that provincial communications policies will have an impact manufacturing sector of the telecommunications industry. The Province Manitoba is sensitive to the fact that its desire to enrich and enhanc lives of the citizens of the province through the means of communicati services requires a substantial commitment to research and development, well as the purchase of quantities of telecommunications supplies and equipment. In pursuit of its policies, Manitoba, through its agency, Manitoba Telephone System, expends in excess of $50 million annually o various supplies, a large part of which is devoted to telecommunicatio equipment and material. Today, the System's total plant is valued in e of $600 million. By explicit policy, these purchases, whenever possibl are made from Manitoban and Canadian suppliers. In addition to this d effect on the telecommunications industry, Manitoba's communications p also have secondary and tertiary impacts on this sector.

Programs to carry out Provincial policies in Manitoba have included th following activities which have had beneficial impacts on the manufact sector of the telecommunications industry:

- A major rural telephone service improvement program designed to upgrade its quality, capacity and reliability. Involving the replacement and installation of thousands of miles of cables and related equipment, when completed it will have cost over $30 million and required the purchase of large quantities of telecommunications supplies.

- A project to improve exchange and toll service to approximately 40 Northern Manitoba communities, costing $20 million.

- A dial conversion program, replacing obsolete magneto exchanges, which cost $7 million in the final 10 years of its completion.

- The adoption of advanced technology, such as digital switching, etc., to improve productivity and reduce costs, thereby stimulating the manufacture of new telecommunications products.

- The development of broadband transmission facilities, including the world's longest coaxial cable link with specialized feed forward type amplifiers researched in Manitoba, at a cost of $9 million.

- A demonstration project at Headingley, Manitoba to test new telecommunications services that could help to stimulate the telecommunications industry. By involving private companies, this program has the potential of creating secondary and tertiary impacts on this industry.

- A rural trial to test fibre optics as a longer haul transmissi medium, incorporation with the Department of Communications, that could provide a large market for this new technology.

By recognizing communications as an essential factor in the lives of citizens, the Province of Manitoba has established those policies wh call upon the manufacturing sector of the telecommunications industr respond with a wide array of equipment and supplies, and to develop tive products needed to meet Manitoba's changing requirements.

DOCUMENT: 840-194/019

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FEDERAL-PROVINCIAL MEETING OF SENIOR OFFICIALS

RESPONSIBLE FOR COMMUNICATIONS

Working Group on Industrial Impacts of Communications Policies

Saskatchewan's Policies for Input to Part 2

St. John's, Newfoundland
September 30-October 3,19

RADIO AND TV

Advertising Regulations

Even Saskatchewan Government has been concerned about the adverse social consequences of excessive alcohol consumption. Since 1920, Saskatchewan has prohibited the advertisement of alcoholic beverages.

INCENTIVES FOR PROGRAM PRODUCTION

Three agencies of the Provincial Government have and do assist in film or video productions. The Saskatchewan Arts Board has provided assistance to film makers for projects with particular artistic merit or of interest to the cultural community. The Department of Culture and Youth supports the Film Pool, an equipment co-operative which co-ordinates the use of film making resources. The Saskatchewan Economic Development Corporation (SEDCO), has, as in the case of "Who Has Seen the Wind", provided loans to film productions on a case by case basis.

NETWORK INTERCONNECTION

Saskatchewan has the lowest population density of any Province in Canada. At the same time, the demography of the Province requires a rather extensive network. An integrated planned approach to network design is required to balance the technological and economic constituents. There is no evidence to suggest that the economies of scale and the scope inherent in the network have been exhausted. Provincial policy is not to encourage additional networks through interconnection because of the increased costs it would impose on all consumers.

Provincial policy encourages the development of a flexible and efficient public network to meet the needs of a variety of users.

The ability of Sask Tel to engage in long range planning has permitted the development of the fibre optic network, now under construction, which will meet transmission needs for a variety of services to the year 2000. A long range vantage point enables the Provincial carrier to risk the investment in a new technology - fibre optics. The early production of this new technology and permitted a Canadian manufacturer to build an industry with the potential to serve world markets.

In addition, the large scale production of fibre optics has accelerated prive reductions in this technology. These savings have made it more cost efficient to use fibre optics and this at a date earlier than was predicted.

TERMINAL ATTACHMENT

The Saskatchewan Government believes that Sask Tel, the Crown-owned telephone company, should maintain its current policy of owning terminals used on the public switched network. The Government takes this position because the ultimate economic cost to the consumer and the potential of economic harm to the network outweigh the benefits for some private users.

The company maintains a variety of terminals to satisfy consumer choice. In addition, Sask Tel's policy is that upon consumer request, it will acquire any terminal that it does not ordinarily offer provided the terminal meets the technical standards.

Automatic answering and recording machines, data sets, facsimile and telephoto equipment, teleprinters, cathode ray tube terminal equipment, telemetering equipment and non-network addressing alarm devices may be attached to the public switched network, provided protective devices are used.

RATE OF RETURN

Sask Tel is owned by the Government of Saskatchewan and is financed through borrowings made on its behalf through Crown Investments Corporation.

Many economists have criticized the use of rate of return criteria for regulated or monopoly firms because it's causes distortions in corporate decisions and may lead to inefficiencies.

Sask Tel is not subject to rigid rate of return regulation. Dividends are shared equally between the Government and the Corporation.

PRICING OF TELECOMMUNICATIONS SERVICES

Saskatchewan's policy is to encourage universal access to its wide range of services.

Value of service pricing, systems rate averaging and cross-subsidizing from competitive to monopoly services are used to maintain low flat rates for basic local service.

Private networks are not encouraged because they detract from the provision of services which are universally available to the public of Saskatchewan.

EXTENSION/UP-GRADING OF SERVICE TO RURAL AND NORTHERN COMMUNITIES

The provision of services on a universal basis is Saskatchewan's basic goal in telecommunications.

Historically, the Government provided financial support to rural telephone co-operatives to improve service.

Sask Tel's responsibility to up-grade services has been increasing since the 1960's, with the first rural improvement program, which up-graded to four-party service in previously unserved areas.

In the early 1970's, the microwave network was extended to Uranium City and telephone service was provided to all communities of more than fifty residents.

The Voluntary Assimilation Program (1977) up-graded telephone service to a minimum of four-party service for subscribers previously served by rural telephone co-operatives.

Sask Tel helped design and finance, with SED Systems, a new telephone carrier service which is more suitable for very low density populations.

Presently, there is a Rural Service Advisory Committee, comprised of Board members and staffed by Sask Tel planners. The Committee examines the options for up-grading rural service to the level of single line or its equivalent.

DOCUMENT: 840-184/020

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FEDERAL-PROVINCIAL MEETING OF SENIOR OFFICIALS

RESPONSIBLE FOR COMMUNICATIONS

(WORKING GROUP ON INDUSTRIAL IMPACTS OF COMMUNICATIONS POLICIES)

Purchasing Policies and Product Research and Development of Saskatchewan Telecommunications

Saskatchewan

Fredericton

May 6 to 9, 1980

WORKING GROUP ON THE INDUSTRIAL IMPACT

OF COMMUNICATIONS POLICIES

The Government of Saskatchewan's major contribution to the development of the manufacturing portion of the telecommunications industry has been through the policies and product development activities of Saskatchewan Telecommunications.

Purchasing Policies

SASK TEL'S purchasing policies are based on a competitive tendering process. In awarding a contract to a supplier, the following factors are taken into account.

- lowest bid
- reliability of contractor, (viability)
- quality of material, equipment or system
- time limitations
- special nature of equipment to be supplied
- special specifications

When tender evaluation ranks competing suppliers' bids essentially equal, SASK TEL does take into account the manufacturer's location. First preference is given to locally-based Canadian firms; then manufacturers located in Canada, and finally companies outside of Canada.

At no time is a premium paid by selecting native manufacturing.

Product Research and development

1. Installation of the world's longest fibre optic network.

SASK TEL recently awarded Northern Telecom a contract to install a 12 fibre, 3200 km. fibre optic system.

The many benefits to NTL (and Canada) include:

a) financial benefits to NTL from this contract

b) increased research and development activity, with an almost guaranteed pay-off

c) a competitive edge to NTL in future contracts (world-wide)

d) economic and industry spin-offs to Saskatchewan including a fibre optic cable manufacturing plant

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2. Design of a transportable structure for Northern Telecom switching equipment, for use as a Community Dial Office (CDO).

Originally, SASK TEL'S small CDO's were actually trailers with the wheels removed. These trailers were poorly insulated, and were designed to handle most of the weight over the wheels, which placed some constraints as to where equipment inside the trailer could be positioned.

To alleviate these problems, SASK TEL designed a "transportable structure" in collaboration with Northern Telecom to handle NTL switching equipment. This structure was better insulated than the earlier trailers, plus the weight could be more evenly distributed.

In the past, SASK TEL has built a large (50') transportable structure for NTL which they used in Eastern Canada. Also, SASK TEL made a smaller structure (complete with switching equipment) available to NTL for use in Alaska when their own CDO was destroyed by fire.

3. Collaboration with SED Systems in the design and development of a subscriber carrier system to serve rural areas and small communities.

In addition to working closely with SED on desirable design features, SASK TEL is funding development of the DLS-7 carrier system, which is presently in the field trial stage.

4. Approximately 1½ years ago, the Science Council of Canada asked SASK TEL to participate in a survey to establish the technological strengths and weaknesses of Canadian industry via an examination of the innovative successes of individual firms. SASK TEL advised the Science Council of a number of innovations where we had some involvement:

a) "LICUS" Vertical Axis Wind Powered Generator

FIRM

Bristol Aerospace,
Box 874,
Winnipeg, Manitoba.
R3C 2S4

DESCRIPTION

SASK TEL will be evaluating this generator at a radio site near Regina to determine the technical feasibility of using these generators to power SASK TEL microwave sites in Northern Saskatchewan.

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b) Subscriber Radio (SR)

FIRM

Farinon SR Systems,
1710 Trans-Canada Highway,
Dorval, P. Q.
H9P 1H7

DESCRIPTION

The SR radio uses time division techniques to economically serve subscribers in remote areas. During 1975-1977, SASK TEL provided Farinon with an operating environment to field test and finalize the system design. However, this was not a field trial in the usual sense, but rather an extension of Farinon's development work. The purpose of the trial was to reveal problems in an actual operating environment which might have been overlooked in initial design and lab testing.

c) Vandal Alarm System

FIRM

Poetker Communications Ltd.,
130 Highland Road East,
Kitchener, Ontario.
N2M 3B8

DESCRIPTION

SASK TEL has asked Poetker Communications to design a vandal alarm system for use over telephone lines, based on specifications and features submitted by us.

d) Telephone Diallers, Models 701, 702, 703

FIRM

SED Systems Ltd.,
P. O. Box 1464,
Saskatoon, Saskatchewan.
S7K 3P7

DESCRIPTION

SASK TEL co-operated with SED in the testing and evaluation of these diallers.

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e) Dialler for the handicapped

FIRM (concept by) Saskatchewan Council for Crippled Children and Adults,
1410 Kilburn Avenue
Saskatoon, Saskatchewan.
S7M 0J8

Attention: Mr. Dennis Krell

DESCRIPTION

The Saskatchewan Council for Crippled Children and Adults designed a dialler to meet the needs of handicapped people, but the dialler did not meet telephone company standards and specifications. SASK TEL assisted the SCCCA in finalizing the dialler design. We intend to have a number of these diallers manufactured for use in Saskatchewan.

f) Dri-Fill Cable

FIRM Northern Telecom Ltd.,
150 Montreal-Toronto Blvd. Lachine
P. O. Box 6122 Station A,
Montreal, Quebec
H3C 3J4

Attention: T. K. McManus

DESCRIPTION

The entry of water into a cable core not only degrades transmission, but also often results in complete failure of the pairs. Dri-Fill cable uses a powdered filling material which, in contact with water forms an impervious block which prevents further penetration of the water into the core.

SASK TEL was closely involved in lab tests of the cable, and initiated a field trial during 1976-1977 to verify its performance and obtain the reaction of field personnel to its use.

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Working Group on Industrial Impacts

British Columbia Submission Regarding Provincial Inputs

Insert (A)

~~(1) Provincial Inputs Requested~~

(a) Educational Broadcasting

The Ministry of Education has the overall responsibility for the development of educational broadcasting in British Columbia. The involvement of the Communications Ministry has entailed assistance in facilitating program distribution. The attached press release announcing the establishment of the KNOW Communications Authority notes that programming is the responsibility of the institutions involved.

(b) Policies and Incentives for Program Production

The British Columbia Communications Ministry is not involved in this activity.

(c) Network Interconnection

British Columbia does not believe this item is within the mandate of this Working Group.

(d) Terminal Attachment

British Columbia supports increased competition in telecommunications and is, therefore, predisposed towards supporting liberalized terminal attachment. The actual industrial impacts are difficult to measure without comprehensive examination. British Columbia believes many of the Group's questions will be examined during the Bell hearings on network addressing terminals, and suggests that the Group bring this to the Ministers' attention.

(e) Pricing of Monopoly and Competitive Services

X As stated ~~in our submission on Part II of the Report~~ above, British Columbia does not believe this topic needs to be considered in this Group.

(f) Rate of Return Regulation

As in (e) above.

(g) Vertical Integration

See the British Columbia paper on vertical integration submitted to the Competition Working Group (July 1980). British Columbia's concerns about the B.C. Tel/A.E. relationship are not necessarily parallel to its concerns about Bell and Northern Telecom. Until the merger, the structural characteristics of the B.C. Tel/A.E. relationship was not analogous to Bell/Northern, since the vertical linkage was through a foreign parent company. The foreign ownership of B.C. Tel has always added a new dimension to the British Columbia situation - a dimension this Group has not considered in Part II.

(h) Earth Station Licensing

The Ministry does not believe that TVRO terminals require licensing. Private individuals or corporations should be free to purchase terminals (TVRO and transmit) from whomever they wish.

(i) Extension of Service

As stated ~~in our submission on Part II~~ above, British Columbia believes that issues such as extension of service are so general as not to require consideration.

(j) Other

The members were also asked to submit information on provincial regulation of advertising. ~~In our submission on Part II,~~ As we stated above ~~that~~, this regulation does not appear to be part of communication policy and questioned its inclusion in the discussions. In any event, beer and liquor commercials on British Columbia radio and television stations are prohibited under the liquor legislation. British Columbia breweries continue to advertise on KVOS (Bellingham, Washington).

Province of British Columbia

NEWS RELEASE

Ministry of Universities,
Science and Communications

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Knowledge Network of the West Communications Authority Established

Creation of the Knowledge Network of the West Communications Authority to coordinate distance education programs of universities, colleges, provincial institutes and school districts and to manage a new educational telecommunications delivery system has been announced by the provincial government.

"With the increasing demand for distance education programs, it is vital that our institutions coordinate their offerings," said Universities, Science and Communications Minister Dr. Pat McGeer. "The Knowledge Network will be able to perform the coordinating function in an objective manner."

"The need for coordination is especially important when developing the new Knowledge Network explained Dr. Pat McGeer. "The network has three elements: a closed-circuit, inter-institutional system; a closed-circuit, low-power transmission and satellite connection to off-campus, interior and northern locations; and access to an educational channel on community cable systems."

The first element is a multi-channel cable and micro-wave system connecting the universities (including the University of Victoria), the B.C. Institute of Technology, the Open Learning Institute, the Robson Square Law Courts and the Vancouver teaching hospitals.

The second element involves the use of the Anik B satellite for distribution to centres outside the Lower Mainland and southern Vancouver Island, and a low-power Instructional Television (ITFS) broadcast in the metropolitan areas.

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Both systems are able to operate independently, or they can be connected to operate as one. Both will have the ability to connect with the educational channels that have been reserved on most cable systems in the province.

"The Knowledge Network is a watershed for B.C. education," said Dr. McGeer. "The new technology will enable our institutions to deliver their programs to residents throughout the province, many of whom would otherwise be denied."

"The potential applications of the system are enormous, with today's technology, we will soon be able to participate in classroom discussions without leaving our homes."

The minister stressed that the Knowledge Network will not offer programs, but will assist existing institutions in the development and distribution of their education materials.

Programs will originate initially at the Universities, B.C. Institute of Technology, and the Open Learning Institute and program funds are a regular part of institutional budgets.

Dr. McGeer said government ministries such as education, health and human resources will also be major programers, utilizing the system to deliver in-service and professional development courses to teachers, nurses and social workers in the field.

The minister also announced that Dr. Walter Hardwick, deputy minister of education, has been appointed president of the Knowledge Network, created as a non-profit society under the Societies Act. Joining Dr. Hardwick on the board of directors will be: Dr. Robert Stewart, chief executive officer of the ministry of universities, science and communications, Gerald Cross, deputy provincial secretary, Jack Fleming, assistant deputy minister, ministry services

department, ministry of education, Harold Page, assistant deputy minister-communications, ministry of universities, science and communications, Don Hamilton, broadcast consultant, and Ron Jeffels, principal of the Open Learning Institute.

"The board may be expanded at a later date to broaden its representation," said Dr. McGeer.

He explained that other institutions, individuals and agencies will have the opportunity to become associate members of the Authority. In addition, the Authority is expected to establish advisory committees to assist it with programing and technical matters.

Capital and operating funding for the Knowledge Network will be provided by the provincial government, while funding for the development and delivery of programs will continue to be provided by the institutions.

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