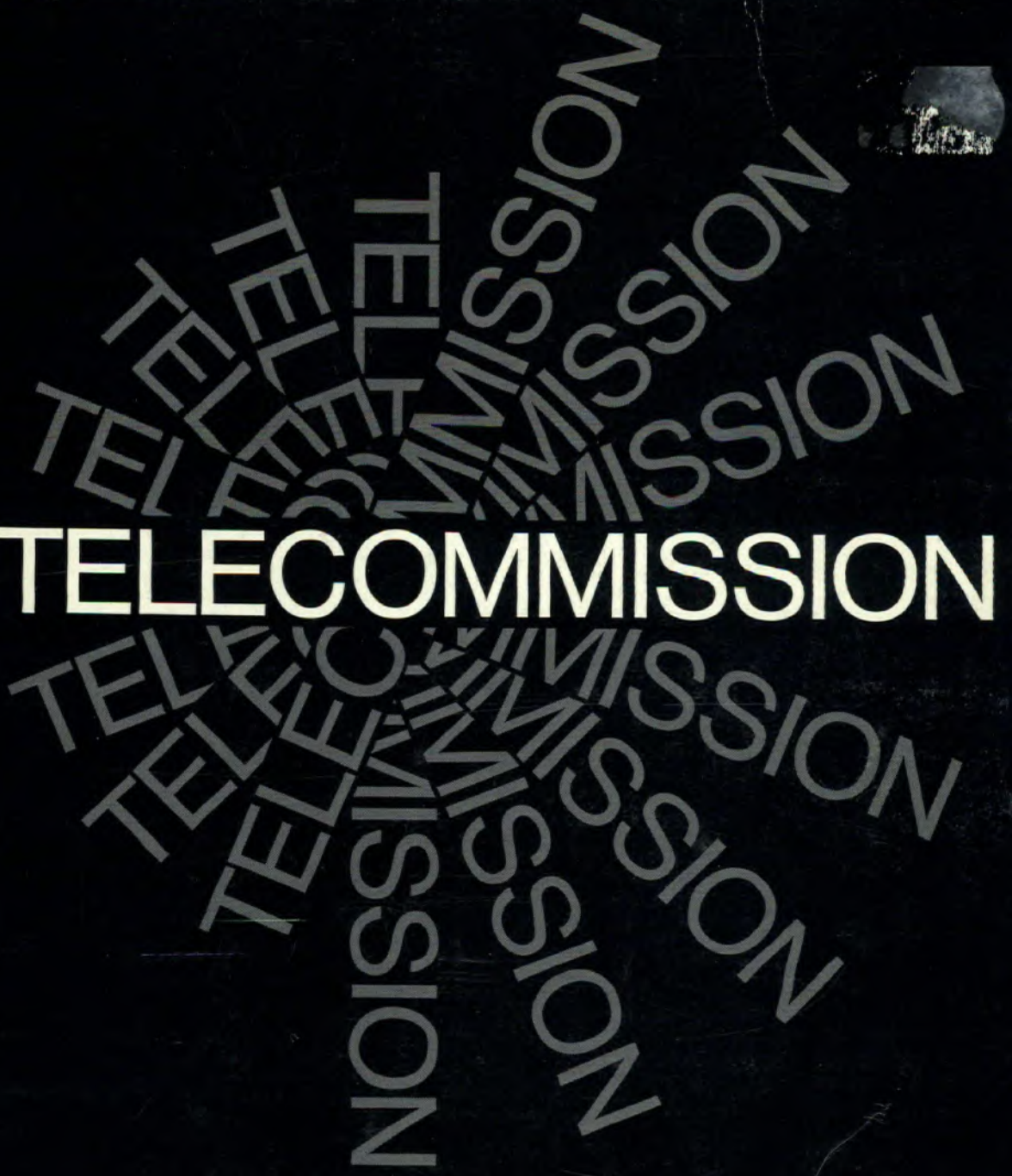

TELECOMMISSION

Study 8(a)

Problems Relating to the Regulation of Private Line Services

The Department of Communications

TELECOMMISSION

STUDY 8(a)

PROBLEMS RELATING TO THE REGULATION OF PRIVATE LINE SERVICES

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This Report was prepared for the Department of Communications by a project team made up of representatives from various organizations and does not necessarily represent the views of the Department or of the federal Government, and no commitment for future action should be inferred from the recommendations of the participants.

This Report is to be considered as a background working paper and no effort has been made to edit it for uniformity of terminology with other studies.

FOREWORD

This document includes three reports. Part One contains the report from Canadian National/ Canadian Pacific Telecommunications; Part Two contains the report of the Trans-Canada Telephone System; and, Part Three contains the report prepared by an "In-House" project team comprised of members from federal government departments and agencies.

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PART ONE

REPORT OF

CANADIAN NATIONAL/CANADIAN PACIFIC TELECOMMUNICATIONS

1) INTRODUCTION

Back Ground

To date, regulation of the Telecommunications Service industry in Canada has been limited to public telephone and telegraph services, services that traditionally have been viewed as monopolies. However the Canadian Telecommunications Carriers also offer a variety of other services, which have not been subject to regulation and have evolved in a competitive environment.

Developments in the Telecommunications Service industry have raised issues concerning the wisdom of the Telecommunications Carriers providing regulated monopolistic services and other services which are not regulated. Accordingly, amendments to Federal legislation will come into force August 1, 1970 to provide for regulation of all Telecommunications Services offered by Carriers which fall under Federal jurisdiction.

The action to regulate all services was taken with the knowledge that the issues surrounding operation of the "other services" would be the subject of this study by the Telecommission.

Scope and Limitations

The study of problems relating to the regulation of the Private Line Services inevitably involves broader issues: the question of competitive versus monopolistic means of supply and the type of regulation

that should be applied to the total Telecommunications industry. As these matters are being covered in Telecommission Study 7 (a)(b), the scope of this study is limited to the examination of specific matters related to the regulation of Private Line Services and other services not regulated prior to August 1, 1970.

The terms of reference are:

1) A definition of the scope of the study and review of some of the "private line" services offered by the carriers and an overview of relevant financial and commercial characteristics.
2) Reference to private line technology, present and future, with a view to identifying its relationship to the study.
3) A description of the regulatory situation relative to private line services in Canada.
4) An identification of problem areas faced by both the users and suppliers of private line services.
5) A presentation of some of the basic regulatory alternatives with respect to private line services, and a discussion of how these would contribute to the solution of problem areas. (i.e. a definition of the various possible objectives of regulation).
6) A presentation of points of view that favour, or do not favour, regulation of private line services. This will serve to identify potential problems and benefits arising from regulation.

7) An examination of the probable impact of regulation of private line services on the telecommunication common carriers and upon the industries environment (e.g. users, regulatory bodies, government policies, etc.).

8) Recommendations concerning the regulation of private line services in Canada.

Note - The reference to satellites within the original terms of reference has been deleted as confirmed by the Liaison Officer.

This study is being undertaken by three groups, an In-House project team comprised of representatives of Government Departments, and the Telecommunications Carriers with each carrier group submitting independent reports. The In-House project team has prepared an interim report and for ease of comparison this submission by CN/CP will insofar as possible use the same format.

2) TELECOMMUNICATIONS SERVICES PROVIDED BY CN-CP

The "in-house" study group initially proposed a definition for "Private Line Services" as "those telecommunication services which are provided to a customer by means of facilities that are exclusively dedicated, for any period of time, to serve his telecommunication requirements". This definition does not, in fact, exclude public telephone service as provided today in that this service also utilizes facilities that <u>are</u> exclusively dedicated to the user for a period of time and would include Telex which in our opinion is a public service.

Assuming that a definition is required for the Telecommunications Services to be reviewed within this Report, namely services not regulated prior to August 1, 1970, it may be more appropriate to differentiate between Private and Public (Telecommunications) Services. We consider a Private Service as a telecommunications service which provides for the exchange of traffic between <u>specified</u> subscribers to the service, as opposed to a Public Service which provides for the exchange of traffic between <u>any</u> subscribers to the service. A private service can be provided to a customer by means of facilities which are exclusively dedicated (non-switched) to his use. This is perhaps a more satisfactory description of a "Private Line Service". However, the term has been generally applied to

all private services including those that are provided by means of shared switched facilities so arranged as to restrict the exchange of traffic to specified subscribers.

Although a full range of Telecommunications services are offered by CN/CP, major offerings can broadly be classified as

- Dedicated Private Line Services;

  Voice, digital record, facsimile, broadcast (audio, video).

- Line Switched Services;

  Telex, Data Telex, Broadband Exchange Service, and "Hot Line" Telephone Service.

- Message Switched Services.

We consider the above as private (line) services except for Telex (and Public Telegram Service not covered by this Report) which by our definition is a public service. Nevertheless as Telex is currently a non-regulated service it is included for review within this report. All of the above services, including Telex, are competitive with services offered by the Telephone Companies.

Dedicated Private Line Services

These Services evolved to satisfy the need to transfer large volumes of traffic between limited numbers of fixed correspondents; a need that was not economically or practically feasible through the use of public telephone or telegram services. At this time the majority of

such services are intra-company voice services and record services operating at low speeds (Teleprinter) although services are available for a full range of transmission capabilities. They use terminal equipment and interconnecting facilities on an exclusive use basis. Charges consist of monthly rentals for terminal equipment and rentals for circuits connecting such terminal equipment at rates related to distance for specific periods of time and to type of service necessary to meet customer requirements, in accordance with published tariffs.

Special Private Line Services

There are variations of the above services which are established on a contractual basis (at prices which may be different from published tariffs) to meet a subscriber's specific requirement. These may involve contributions by two or more parties including the subscribers. Two examples serve as illustrations:-

1. Program Transmission Service (Video and Audio)

   These are private services provided by means of facilities specifically designed (high quality) for the transmission of Audio and/or Video broadcast network services between specified points. Where facilities are required full time such as for CBC and CTV network service, service is provided on a contract basis for a specified term. When required occasionally, service is provided in accordance with published tariffs related to distance, time and the quality of service required.

2. Stock Market Quotation Services

These are services provided on a contractual arrangement involving participation by stock and commodity exchangee, Telecommunications Carriers and subscribers. They provide for the distribution of stock or commodity exchange market quotations to member firms or other approved recipients. Generally the exchange and the carrier agree on the amount to be charged subscribers to the service, depending on the distance from the exchange, in the form of a flat monthly charge, and agree on a settlement between themselves. The carrier provides the terminal equipment in the subscriber's office but may permit the subscriber to connect other terminal devices with appropriate adjustments in charges.

Line Switched Services

These are switched services, providing for direct connections between equipment situated in subscriber's premises. Service is provided by means of exchanges centrally located to serve specific communities and linked together by common trunk groups which enable a subscriber to share trunk circuits with other subscribers although, while connected, he has the exclusive use of the circuit allocated to him in the selection process. The service is designed to meet the needs of users with a requirement to communicate with a large number of correspondents or a limited number of specific correspondents at

a volume level which makes dedicated Private Line Service uneconomical. Subscribers to these services pay a fixed monthly fee for the exchange connection and the terminal equipment, plus a toll for each call made, based on the circuit holding time and the distance between the points of origination and destination. Public telephone service is a line-switched service and while CN/CP do not provide public telephone service except in certain areas of Newfoundland and the North West Territories, CN/CP do provide a variety of similar services as follows:-

Telex

Telex is a line-switched service for teleprinters operating at a speed of 50 bauds. It uses telegraph long line plant designed to occupy the minimum amount of frequency space to provide satisfactory transmission at this speed. Subscribers are charged for this service as described above except that there is no minimum toll charge. Service is provided by CN/CP throughout Canada and is available throughout various parts of the world. At present there are approximately 20,000 Canadian subscribers who can communicate with each other as well as with approximately 29,000 subscribers in the U.S.A. Overseas subscribers bring the total to approximately a quarter of a million subscribers.

Data Telex

Data Telex is a similar service to Telex except that it is designed to operate at transmission speeds up to 180 bauds over appropriate

line facilities. As opposed to Telex, terminal compatibility is not required by CN/CP so that complete connectability between all subscribers is not available. There are approximately 400 customers using this service.

Broadband Exchange Service

Broadband service is provided on a line-switched network specifically designed for simultaneous two-way data transmission on circuits of various bandwidths up to 48 KHz. At present the network is only equipped with specially conditioned voice grade circuits (nominally 4 KHz) and is handling data transmissions at speeds up to 4800 bauds. The wider bandwidths will be added as soon as the demand develops. Since terminal compatibility is not required by CN/CP, complete connectability between all subscribers is not available. Since voice quality facilities are used, telephone services are available but are not offered as a public service. There are however a number of special features available on Broadband such as abbreviated dialling, hot line, and conferencing, which make this network attractive for private telephone service. Furthermore, because of restricted access, it does not suffer from the over-load conditions which can occur on the public telephone network, particularly during emergency conditions. Subscribers are charged for Broadband service, as described for all line switched services, except that there is a 30 second minimum toll charge. As wider bandwidths are added and the subscriber has the ability to

select the bandwidth of his choice, tolls will be related in the future to his bandwidth selection. While service is presently limited to larger communities, extensions to other locations in Canada may be subject to special conditions. There are approximately 500 subscribers to this service.

"Hot Line" Service

"Hot Line" service is a private telephone service by means of which instantaneous connection between two particular correspondents is achieved when the originator takes his telephone "off-hook" (no dialling). While this type of service is available on Broadband there are economies in providing "Hot Line" service as a special service where there is sufficient demand for this unique telephone service. In this situation service is provided by means of pairs of special switches between specific locations interconnected by voice grade trunks. Service is only provided at this time between Montreal and New York and between Toronto and New York. Subscribers pay a fixed monthly fee for connection and toll charges based on holding time and distance.

Message Switched Services

These are services provided for record transmission using store and forward switching (computer oriented switches) as opposed to line switching techniques. Incoming lines are connected to computers which store complete messages or parts of messages and forward them in accordance with prescribed routing information to the point of destination or an adjacent switch as outgoing lines are available. A variety of service options are available such as code and speed translation, multi-addressing, message retrieval and accounting. At this time services are oriented to private use and have been provided on a contractual basis. In view of the variety of special requirements this practice will be continued. It is intended in the future to offer a public Message Switched service. At that time tariffs will be published to cover public offerings.

Significance of Technology

It is important to understand that the above descriptions are general in nature and within each category, special services exist that are "custom designed" to meet specific requirements of customers, industries or groups of industries. These special services are becoming increasingly important to meet the more sophisticated demands of the Canadian telecommunication user. CN/CP takes pride in the fact that it has been able and will continue to use technological developments to the fullest extent in the provision of new and improved

Telecommunications Services and to adapt these services to meet the special requirements of its customers.

It is abundantly clear from the types, quality and quantities of services in Canada today, as compared to those available a few years ago, that technology has played a significant role in the development of the Telecommunications Industry and will continue to do so in terms of the Carrier's ability to provide new services and maintain tariffs at lower levels than would otherwise be possible.

Provision of Service

As a Telecommunication Carrier, CN/CP recognizes an obligation to provide and continue to provide services required for any legitimate purpose throughout Canada within areas where it generally provides such services. Where suitable distribution facilities are available, CN/CP undertakes to provide service upon application with all reasonable despatch. Where suitable facilities do not exist, it is prepared to provide service if there is an effective demand (i.e. demand at compensatory rates). In this regard, CN/CP constantly examines market potentials in areas not currently served to determine the economic feasibility of extending any or all services into such areas at standard tariffs.

Revenues

It is important in an examination of CN/CP operations to note the relevant significance of its various service offerings in terms of

gross revenue. The following is a rough breakdown of these revenues for 1969.

- Private Line, Public Telegram and Telephone services	$ 37,300,000
- Telex and Data Telex	30,300,000
- Broadband Exchange Service	1,000,000
Total	$ 68,600,000

NOTE

Revenues from Hot Line and Message Switched Services were not significant in 1969 as these are relatively new services.

While the revenues derived from Public Services have not been separated, it is significant that the unregulated portion of CN/CP services represents approximately 76% of CNT's and 82% of CPT's gross revenues. Under the circumstances, the type of regulation coming into force on and after August 1, 1970 will have far reaching affects on CN/CP's operations.

3) THE CANADIAN REGULATORY ENVIRONMENT

The history of regulation and the current regulatory settings are subjects of review by Telecommission Studies 1 (b) and 7(a)(b). It is important however for an appreciation of the following section, to summarize the present situation.

In Canada regulatory control for Telecommunications Carriers is exercised both Federally and Provincially. To date Federal regulatory powers have vested with the Canadian Transport Commission (CTC). Provincial Carriers are generally regulated by their local authorities. Bell Canada, Canadian National Telecommunications, Canadian Pacific Telecommunications and the B.C. Telephone Company are all subject to Federal control.

As an exception to the climate of divided control, adminstration of the radio frequency spectrum is exclusively under the jurisdiction of the Federal Minister of Communications.

Effective August 1, 1970 the jurisdiction of the C.T.C. will be broadened to include most services offered by the Telecommunications Carriers over and above the public telephone and telegraph services. As this enlarged jurisdiction is just about to be implemented its impact on the Canadian Telecommunications Industry is unknown. The criteria by which the C.T.C. will exercise control are, by and large, uncertain and insufficient and the problems resulting from split jurisdictional control (Federal/Provincial) have yet to be resolved.

4) STRUCTURE OF THE TELECOMMUNICATION INDUSTRY

The purpose of this study is to review the consequences of regulation of private line services and other services which were not regulated prior to August 1, 1970, as it affects the users and suppliers of such services. In our opinion this cannot be done in isolation from the broader positions taken in respect of the total industry and documented in other submissions. It must recognize national objectives and the structure of the Telecommunications (Service) Industry to arrive at recommendations concerning the regulation of a particular segment of the total operation.

CN/CP has developed relevant positions in reports on Telecommission Studies 7(a)(b) and 8(b). These developments will not be repeated herein but may be summarized as follows.

Where telecommunication service needs require access on demand to any one of millions of points, i.e. to any one of the subscribers to the service, special considerations relating to system optimization, integrity and reliability apply that make a case for monopoly in public service. In all other circumstances the telecommunication services can be more responsively and efficiently handled by competing suppliers.

Because the Telecommunications Industry is capital intensive and

becoming increasingly so as a result of the high rate of technological developments and obsolescence, and because of the inherent economies of scale, the organizational choice for the industry must be a mix of limited competition and monopoly.

The present structure of the Telecommunications Industry consists of essentially two competing groups, CN/CP Telecommunications as one group and the Telephone System which includes Bell Canada and provincial and regional telephone companies as the other. This limited carrier configuration has performed well and met Canadian needs with wide availability of essential services at acceptable prices for the user, and should be maintained. There is sufficient business to support these two carrier groups and no evidence to suggest that they will not adequately meet the anticipated needs of the future, given certain changes to strengthen and reinforce the competitive situation.

Accordingly CN/CP contend:

1) There should continue to be a monopoly in public telephone service.
2) CN/CP should be responsible for a monopoly in public record service to provide:
   (a) Telegram services.

(b) Line switched services (including quasi real-time systems): record services at terminal transmission speeds to 600 bauds (Speeds which can be accommodated economically by telegraph circuits without resorting to a full voice bandwidth).

Note: This would require that the existing TWX, Telex, Data Telex, TelTex and Telegram services be integrated into a single network.

(c) Message switched record services involving store-and-forward techniques and operating at any speed dictated by the current practice and the state of the art.

3) Two-carrier competition is desirable for certain sectors of the Telecommunications market mainly -

(a) Dedicated private line service: voice, digital record, facsimile, telemetering and broadcast network service, audio and video.

(b) Line switched service: digital record in excess of 600 bauds, private voice and facsimile.

(c) Message switched record services for private use.

4) Effective regulation is required which will prevent economic strength derived from protected markets in the monopoly field from being used by carriers to engage in unfair or destructive

practices vis-a-vis other carriers in the competitive field. Regulation must prohibit cross subsidization between various classes of service and in particular between monopoly and competitive services.

5) To avoid wasteful duplication of local services, carriers must be allowed to acquire local distribution facilities from another carrier in order to access a subscriber to their services. Furthermore to prevent monopoly power from denying competitive opportunities in private line services, all carriers must be allowed access to any local (metropolitan) monopolistic switched service.

The problem of examining in isolation specific questions relating to the regulation of private line services and other services which were not regulated prior to August 1, 1970 are immediately apparent.

CN/CP contend monopolistic (public) services require regulatory constraints in the public interest which are not needed for competitive (private) services. On the other hand regulation of competitive services should be broad enough to promote effective competition and yet have sufficient safeguards to maintain fair competition.

In the view of CN/CP it is not useful or constructive to examine the problems relating to private line services without accepting the premise that effective regulation of monopolistic services will and must be different from regulation of competitive services and must preclude cross subsidization between monopolistic and competitive services.

5) REQUIREMENTS OF REGULATION

Regulation of the Telecommunication Industry must protect and promote the availability of Telecommunications Service to meet user requirements and the ability of Carriers to meet these requirements, all consistent with the public good. Regulation must be designed to avoid potential user and carrier problems and to achieve national objectives.

User Requirements

The user is primarily concerned with the availability, cost and performance of services. Specifically the user needs assurance that:

1. Services will be available where and when needed, consistent with his particular requirements, which are designed to minimize (capital and maintenance) costs. This requires that the Carriers take full advantage of technical developments to improve existing services and establish new services.

2. The quality and reliability of service is provided and maintained to the highest degree possible at reasonable cost.

3. Rates charged for service are not unduly or unjustly discriminatory with rates charged elsewhere for similar and other services. Rates should bear relationship to the cost of provisioning over an entire service offering.

4. Rates charged for services do not reflect costs of unreasonable capacity for maintenance, expansion and diversification.

5. An alternate supplier of Telecommunications Services will be available if the quality of service is less than expected.

6. A choice of suppliers will not be limited by artificial barriers between Carriers which preclude competition for Private Line Services. This requires that all Carriers have the right of access to local distribution (loops) and local switching facilities, where supplied by a single Carrier, to extend their Private Line Services.

Carrier Requirements

The carrier is primarily concerned with its ability to provide marketable services at prices which will earn a fair and reasonable return and attract new capital. It must be assured that:

1. Regulation will avoid a competitive advantage being held by one Carrier in the provision of competitive services by reason of an exclusive position in the supply of public services which would prevent other Carriers from sharing in the full market potential.

2. Regulation will prohibit cross subsidization between classes of services and in particular between monopoly and competitive services.

3. Regulation will be sufficiently flexible to permit special rates under certain circumstances. For example, special rates should be recognized for -

   (a) Inter-carrier rentals

   (b) Large single user networks where the user may make a capital contribution towards the provision of service or is prepared to enter into a long term contract.

   (c) Market testing, e.g. provisional rates for new developments.

4. Regulation will not limit earnings to the extent that will affect its ability to -

   (a) Attract new capital.

   (b) Maintain adequate employee training programmes to develop skills required by advanced technology.

   (c) Maintain an adequate salary plan to retain and attract specialists in the face of competition from other industries.

5. Involvement in regulatory processes will be minimized in terms of the assignment of personnel and costs.

6. Regulation will not dilute management's prerogatives for individual company initiative in the decision making process.

National Requirements

Regulation of the Telecommunications Industry must be such that it will promote the provision of services which;

(1) Are responsive to public demands.

(2) Strengthen the national economy and social structure.

(3) Are efficient in the use of radio frequency spectrum.

(4) Do not concentrate economic control.

(5) Provide for national security.

(6) Are responsive to change and developments in national policy.

6. CRITERIA FOR REGULATION

CN/CP regards the existing regulatory tools possessed by the C.T.C. under the recent amendments of the Railway Act as inadequate.

Ultimately as a result of the Telecommission's deliberations, it is expected that a new Telecommunications Act will be passed. It is hoped that the problem of divided jurisdiction in telecommunications matters will be resolved.

It is important that this new Act clearly defines the regulatory powers vested with the authority designated to administer Canadian Telecommunications Policy and the criteria to be used by this authority to judge the reasonableness of tariffs and quality of service provided by Telecommunications Carriers.

The fundamental principles of regulation to be applied to the total industry are examined by CN/CP in their response to Telecommission Study 7(a)(b). This paper (8a) will not deal with regulation of monopoly services nor repeat the detailed developments in 7(a)(b), but will summarize the conclusions in respect to competitive services. It is essential to reiterate the position of CN/CP that regulation must prohibit cross subsidization between various classes of service and in particular between monopoly and competitive services.

recognizes that there are indispensable functions required of an effective regulatory body which apply to the whole spectrum of Telecommunications Services whether competitive or monopolistic.

(1) It must have authority to approve or disapprove applications from non-established carriers to engage in any type of Telecommunications activity in a given area whether as a Telecommunications Carrier or for private use where Parliament has jurisdiction over such activities by virtue of the provisions of the Canadian Constitution. Among other things it must consider whether approval of an additional Telecommunications Carrier is in the public interest. It should be incumbent on the regulatory authority, in the performance of this function, to consult with existing Telecommunications Carriers.

(2) It should have authority to act on customer complaints to ensure that quality of service as defined by the carrier is being provided.

(3) It must have authority to approve or disapprove the use of radio frequency spectrum in accordance with defined criteria. In the case of existing Telecommunications Carriers only technical criteria should apply.

In respect of rate regulation, CN/CP oppose pricing policies based on Company-wide costs. Insofar as it is considered necessary to

regulate rates of competitive services, regulation should be on an individual class-of-service basis.

One of the major undesirable effects of overall rate-base, rate-of-return,regulation is that it permits and often encourages cross subsidization among the various classes of services offered. There are several economic ills that may result from cross subsidization particularly in cases where carriers are supplying monopoly as well as competitive services.

(1) Productive resources of the industry may not be allocated in the most efficient way, e.g. the diversion of capital to meet competition which might be more efficiently used to provide other services.

(2) Cross subsidization can be harmful to competition where a carrier can cut prices below cost, making up the difference from profits earned in other markets, while competitors may have to cover all of their costs in the competitive market. This causes inequitable rates for various classes of service whereby consumers of some services are subsidizing the consumers of other services.

Thus where it is felt necessary to examine and perhaps limit earnings of a Telecommunications Carrier, the regulatory authority should approve or disapprove rates on the basis of separate classes of service.

Under competitive market conditions the danger that high profits can occur and continue is minimal. It is therefore urged that rate regulation of such services should be largely confined to protection against non-compensatory rates harmful to competition or unfairly discriminatory among customers.

Every Telecommunications Carrier should be required to file tariff schedules for all of its service offerings for regulatory review and public information. These schedules should show the charges, areas served and conditions applying to the use of the service. To provide sufficient time for regulatory review and objection by customers or competitors, tariffs with one exception should be filed prior to their effective date according to time periods specified by the regulatory authority. Rate changes in existing tariffs should automatically come into force on the effective date unless disallowed or temporarily suspended for a specified period of time by the regulatory authority on its own initiative or in respect of a challenge. The exception to the foregoing arises when a Carrier must immediately reduce its rates to meet an offering by a competitor under Federal or Provincial jurisdictions.

New tariffs should automatically come into force on the effective date even if under review by the regulatory authority. The regulatory authority should allow cost averageing within an accepted

class-of-service and value-of-service pricing when either pricing technique is not harmful to competition or unjustly discriminatory among customers and when it may promote the development of a service, convenience in pricing, or other favourable result. Cost averaging is the offering of a service at a single price although the costs to provide service to various customers differ. Value-of-service pricing is charging different customers or classes of customers the amount that each is willing to pay.

A carrier should be permitted to offer immediately a competitive service at the rate published previously by a competitive carrier (Federal or Provincial), whether or not that rate is compensatory for the carrier reducing its rate to meet such competition. This means that such competitive tariffs need not be filed before becoming effective. This is a necessary condition to allow more than one supplier of the service. The responsibility for showing that the rate is compensatory, if challenged, lies with the first carrier that published the rate. If the first carrier later raises the rate, other carriers for whom the rate is non-compensatory must do the same.

In general where two major competing carriers exist the carriers should be allowed to confer and discuss rate levels, in the same manner as that permitted Railway Companies under the Railway Act.

The carriers, in cooperation with the regulatory authority, should develop uniform methods of cost accounting and cost separation for purposes of tariff review. A tariff filing for competitive service should require the inclusion of only broad cost information. Upon complaint however, the carrier who first submitted a tariff should have to establish in a complete way the validity of the tariff, as being compensatory or non-discriminatory, according to the nature of the complaint.

As the initiative for the submission of tariffs rests with the carrier, so should the classifications of service offerings contained in the tariffs. As a general rule, carriers should file separate tariffs for distinguishable classes of services in order to facilitate separate consideration and review of each by the regulatory authority. All carriers should have ample opportunity to review all proposals for new service classifications submitted by other carriers and to file at any time objections when a classification is believed to be unfairly harmful to competitition or discriminatory among customers. The regulatory authority should have the final administrative responsibility for working out conflicts among carriers and disallowing inappropriate classifications. The regulatory authority also should be able to undertake reviews of proposed new classifications on its own initiative.

Carriers should be required to file with the regulatory authority copies of all contracts and agreements with other carriers and its customers. These contracts should be considered confidential by the regulatory authority.

The regulatory authority should have the same powers of review and apply the same criteria in the evaluation of contracts as it would if the tariff were public. The regulatory authority should review inter-carrier agreements in order to insure the reasonableness of their terms, particularly when one carrier must rely upon a monopoly service offered by another carrier e.g., the exclusive provision of local loops by telephone-operating companies.

PART TWO

REPORT OF THE

TRANS-CANADA TELEPHONE SYSTEM

STUDY 8A: PROBLEMS RELATING TO THE REGULATION OF PRIVATE WIRE SERVICES

A. INTRODUCTION

This study will analyze problems relating to the regulation of certain Canadian telecommunication services. These services will be referred to as "private services" and defined as follows:

> Private services include all telecommunications services other than public telephone and message telegraph service. They are generally characterized by having more than one supplier and varying degrees of competition.

A brief description of the services, their development, the size of the market, and the present regulatory situation is included. The main body of this report will discuss some of the problems identified by users and suppliers of private services. The results of this analysis should assist in formulating policies appropriate for the development of private services in Canada.

B. BACKGROUND

1. Examples of Private Services Offered by the Telephone Companies

a) Private-Line Voice[1], Teletype

- provides facilities which carry voice or printed messages respectively. There is no access to the public telephone network.

b) Teletypewriter Exchange Service (TWX)

- provides switched teletype communication between terminals via the facilities of the public telephone network.

[1] Private-line voice is considered as public telephone service by the telephone companies and regulatory bodies in Nova Scotia and Prince Edward Island. As such, it does not qualify under the definition of private services in those areas.

c) Program Transmission - Video, Audio

- provides dedicated facilities for carrying audio and video signals for television, radio and similar uses.

d) Data Transmission - with and without terminal equipment

- provides the capability of sending and receiving data through either the facilities of the public telephone or dedicated private line networks.

e) Private Mobile Radiotelephone Systems

- provide the equipment and facilities necessary for internal communications between vehicles and specific locations.

f) Miscellaneous Services

- These include special purpose private communication systems and/or terminal equipment.

2. Market Development

Some private services have been long standing offerings of the telephone companies. However, since World War II, and particularly in the last decade, the supply of private services has become an increasingly important segment of Telco-supplied services. During the same period, other organizations entered the market in competition with the telephone companies. The Canadian National and Canadian Pacific Railways operate a communications network which is used both for internal requirements and to supply public message telegraph and private services. Other companies offer a variety of equipment for data, radiopaging, private mobile radiotelephone, and other services. In addition, many user-owned or leased communications systems serve purposes which could otherwise be satisfied by the private services of the common carriers.[2] Private services have thus developed in a competitive environment. There has been little direct regulatory involvement.

[2]See Study 8b (i)

The data compiled on the following pages are intended to show the general relationship between private services and public telephone services. Three measurements have been used to estimate this relationship - circuit miles, revenues, and circuits by major Trans-Canada cross sections.

Table 1 shows, for the Trans-Canada Telephone System, the circuit miles used for long distance message service (including TWX) and those used for inter-city private line services respectively. Table 2 shows the relationship between revenues from private services (local and inter-city) and the total operating revenues of all TCTS members. Table 3 shows the number of message toll and private line circuits in selected cross sections. All data are for the years 1967-8-9. Growth rates have been included in Tables 1 and 2.

It should be noted that the principal users of extra-Provincial private services are the Federal Government (notably DND) and the national radio and television broadcast agencies. These customers account for over one-half of these private service facilities.

TABLE 1: CIRCUIT MILES - TRANS-CANADA TELEPHONE SYSTEM - INTER-PROVINCIAL ONLY

See Note Below

	1967		1968		1969	
	Miles	% of Total	Miles	% of Total	Miles	% of Total
Message Toll (incl) TWX	4,730,000	90%	5,560,000	86%	7,020,000	86%
Private Line	506,000	10%	907,000	14%	1,125,000	14%
Totals	5,236,000		6,467,000		8,145,000	
Growth in:	1967 - 1968	(%)	1968 - 1969	(%)		
Message Toll	17%		26%			
Private Line	79% *		24%			
Totals	24%		26%			

TABLE 2: ORIGINATED REVENUES - TRANS-CANADA TELEPHONE SYSTEM

See Note Below

Year	Private Services (including intra-provincial business)	Toll Operating Revenue TCTS Member Companies	% Private Services
1967	$ 45,118,000	$ 1,046,832,000	4.30%
1968	$ 51,797,000	$ 1,138,394,000	4.55%
1969	$ 58,341,000	$ 1,268,277,000	4.60%
Growth 1967-1968	15%	9%	
Growth 1968-1969	13%	11%	

NOTE: Telephone records do not distinguish between exchange-connected circuits (Foreign Exchange and Tie Trunks) and non-exchange connected voice grade private lines. The former were extracted by an estimating process based on current available data.

* Due to a significant increase in defence requirements.

TABLE 3 MESSAGE TOLL AND PRIVATE LINE CIRCUITS (1)

TRANS-CANADA TELEPHONE SYSTEM MAJOR ROUTES

See Note Below

	INTER-PROVINCIAL														CANADA - U.S.A.											
	B.C. TO ALTA	% OF TOTAL	ALTA TO SASK	& OF TOTAL	SASK TO MAN	% OF TOTAL	MAN TO ONT	% OF TOTAL	ONT TO QUE	% OF TOTAL	QUE TO N.B.	% OF TOTAL	N.B. TO N.S.	% OF TOTAL	B.C. TO USA	% OF TOTAL	ALTA TO USA	% OF TOTAL	SASK TO USA	% OF TOTAL	MAN TO USA	% OF TOTAL	ONT TO USA	% OF TOTAL	QUE TO USA	% OF TOTAL	N.B. TO USA	% OF TOTAL
1967																										
Message Toll & TWX	355	93	565	95	530	94	499	92	964	77	372	93	322	80	258	93	53	48	-	-	166	93	987	86	1083	92	102	39
(2) P/L Voice & TTY	4	1	3	1	3	1	3	1	150	12	4	1	6	2	9	3	1	1	-	-	3	2	144	11	73	5	5	2
Program	24	6	26	4	28	5	30	5	34	3	20	5	25	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Defence	-	-	-	-	-	-	14	2	100	8	3	1	47	12	11	4	57	51	-	-	9	5	40	3	42	3	157	59
Total Voice Equivalent	383	100	594	100	561	100	546	100	1248	100	399	100	400	100	278	100	111	100	-	-	178	100	1171	100	1198	100	264	100
Total 1-way Video	4		5		4		4		4		4		3		-		-		-		-		4		-		-	
1968																										
Message Toll & TWX	433	92	686	94	631	94	630	90	1238	79	422	87	372	82	322	57	71	48	-	-	245	79	1190	77	1157	83	100	29
(2) P/L Voice & TTY	4	1	4	1	4	1	5	1	167	11	6	1	8	2	9	2	1	1	-	-	3	2	160	9	79	4	5	2
Program	24	5	26	4	28	4	30	4	34	2	20	4	25	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Defence	9	2	10	1	10	1	35	5	121	8	34	8	49	11	236	41	75	51	-	-	59	19	214	14	184	13	238	69
Total Voice Equivalent	470	100	726	100	673	100	700	100	1560	100	482	100	454	100	567	100	147	100	-	-	307	100	1564	100	1420	100	343	100
Total 1-way Video	4		5		4		4		4		4		3		-		-		-		-		4		-		-	
1969																										
Message Toll & TWX	517	92	797	94	770	94	791	90	1484	71	486	80	441	84	357	62	107	34	-	-	263	79	1562	80	1187	75	111	47
(2) P/L Voice & TTY	5	1	6	1	7	1	8	1	179	9	5	1	8	2	13	2	2	1	-	-	8	2	178	8	87	3	6	3
Program	24	4	26	3	28	3	36	4	34	2	20	3	24	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Defence	18	3	21	2	17	2	48	5	384	18	98	16	49	9	206	36	203	65	86	100	60	19	222	12	348	22	120	50
Total Voice Equivalent	564	100	848	100	822	100	883	100	2081	100	609	100	522	100	576	100	312	100	86	100	331	100	1962	100	1622	100	237	100
Total 1-way Video	4		5		4		4		4		4		3		-		-		-		-		4		-		-	

(1) Does not include circuits leased to other carriers.
(2) These figures represent the voice equivalent for teletype circuits.

NOTE: Records for Private Line Voice and Teletype exclusive of Foreign Exchange, Tie Trunks, and Off-Premise Extensions were available for 1969 only. Using this current data as a basis, appropriate statistics were developed for 1967 and 1968.

3. Canadian Regulatory Situation Today

a) General

In general, private services have been free from direct regulation. Although there is no clear distinction between private services and other telecommunication services in most provinces, the provincial regulatory agencies appear to have the legislative power to impose direct controls. The Federal Government has recently amended the Railway Act to "remove the exemption (from Railway Act) for private wire services."[3] Actual regulatory practice is consistent in both Federal and Provincial jurisdictions with only a few exceptions. These practices and exceptions are outlined below.

b) Rate of Return

Both Federal and Provincial regulatory bodies examine the overall rate of return on telephone company operations. This affects the rates which are set for private services, since the revenues derived from private services contribute to the total revenues of the telephone companies. In addition, investments in private services are included in the capital structure on which the rate of return is calculated.

c) Approvals for Specific Rates

The only provincial regulatory agencies which approve rates for all intra-provincial private services supplied by companies under their jurisdiction are the Public Service Board of Quebec and the Board of Commissioners of Public Utilities for Newfoundland and Labrador. The regulatory authorities in Nova Scotia and Prince Edward Island approve rates for private-line voice service.

[3]Bill C11, House of Commons of Canada, 1969.

d) Approvals of Construction Expenditures

In most provinces, investment management and the decisions to undertake new private service projects are left to the discretion of the telephone companies. However, in Nova Scotia, all projects over $5,000 must receive prior approval; while in Saskatchewan[4] and Newfoundland, those involving capital expenditures in excess of $25,000 require approval.

e) Cost Separations

The fact that private services should not place a burden on public telephone service has been accepted throughout the industry. However, until recently, little attention has been directed at the separation of costs between classes of service by the Canadian regulatory bodies. Both the Commissions and the industry appear to recognize the problem of identifying specific costs when several services use the same facilities and labor.

At the present time, Bell Canada, the New Brunswick Telephone Company and the Newfoundland Telephone Company - at the request of their regulatory bodies - are conducting research into the feasibility of cost separation. The problems of identifying costs are discussed further in Section D(1).

[4]While the other TCTS members are subject to the authority of a designated regulatory commission, Saskatchewan Telecommunications is controlled by its Board of Directors, the Chairman of which is the Minister of Telephones for the Provincial Government. Approvals for projects over $25,000 are given either by the Board of Directors or the Cabinet at the discretion of the Minister.

C. ANALYSIS OF THE EXISTING ENVIRONMENT

1. General

Many of the basic problems relating to the regulation of private services result from the varying characteristics of the markets in which the services are supplied. We understand that a more detailed analysis of supply conditions - monopoly, oligopoly, and competition - will be contained in Telecommission Study 2(a). Some demand characteristics are covered in Study 2(e).

Different supply conditions apply to different segments of the private service market. The provision of intercity transmission facilities, for example, would be described as oligopolistic - a small number of suppliers each with a substantial share of the market. Local distribution facilities, on the other hand, are supplied almost exclusively by the telephone companies. The demands for other private services (e.g., terminal equipment) are met by many suppliers.

The effects of an oligopoly on pricing policies, innovation and entry into the market are not clear. In theory, the users of these private services might argue that the common carriers are in a position to restrict the entry of new competitors; that they have the power to control prices; that their secure market position reduces the incentive to improve technology, quality and efficiency; and, that some form of regulation is required. However, an oligopolistic supply condition such as applies to the provision of inter-city private services has advantages. These include many of the benefits of competition and reasonably efficient use of resources.

That segment of the market which is more clearly competitive requires only the self-regulating features of supply and demand and the rules governing the conduct of business in general. The provision of some types of terminal equipment has many of the characteristics of this type of market. As a result, the need for regulation in this area cannot be justified.

The analysis in the next few pages will be directed primarily at the provision of inter-city facilities for private services. References to terminal equipment will be made as required.

2. Limited Competition

Limiting the number of common carriers providing inter-city transmission facilities for private services can be advantageous for Canadian telecommunications users. Inter-city private services, like the long distance "public services" of the common carriers, are supplied by transmission systems which are characterized by decreasing unit costs. To the extent that competitors duplicate facilities, each company's economies of scale are not realized and overall costs are higher.

According to one economist:

> The optimum scale of plant may be large enough in comparison with the market...so that there is not room in the industry for enough firms to make the market one of pure competition. If the firms of the market were broken up...each may have a smaller than optimum scale of plant. Consequently, ...the market prices of the product may be higher with such an arrangement than they would be with an oligopolistic market structure.[5]

[5]Leftwich, Richard H., The Price System and Resource Allocation, Holt, Rinehart and Winston, 1966, P.239.

In the past, the demand for private services has been small in relation to that for other telecommunication services. As a result, private services have generally been supplied by expanding the communications facilities already in existence. The market for inter-city services has, therefore, attracted only two direct competitors in the common carrier field - the national railways and the telephone companies.

In addition to the effects of competition on the attainment of economies of scale (low supply costs), unrestricted freedom of entry would attract new competitors only to the most profitable regions, leaving the other areas to the common carriers. In such a case, adjustments to pricing patterns would be required, which would probably result in higher prices for users in these other areas. The effects that this would have on achieving the optimum development of communications in Canada cannot be predicted at this time.

Regional and national communications policy, developed mutually by the active participation of the carriers and government, can assist the planning of private services development. The management of the affairs of the carriers, within the framework of the established policy, should be the exclusive responsibility of these carriers. If the goal is to supply inter-city private services throughout Canada, while retaining some benefits of competition, then the present environment of a limited number of suppliers is satisfactory.

3. Technology and Innovation

The growth of public and private services has been accompanied by the application of new technology and innovation. This growth could

not have been achieved without the desire of the common carriers to adopt new methods of communication and their willingness to assume the risks involved. Construction of the Trans-Canada Telephone System's microwave network, the subsequent progress in increasing its capacity and capability, and the development of electronic switching are examples of the application of new technology.

As a result of industry research and development activity, communications technology has advanced at a rapid pace. New techniques and equipment are adopted as quickly as possible subject to certain economic constraints. A significant factor governing the speed at which these new developments can be introduced on a large scale is the cost of displacing existing plant. Because of the high cost of communications equipment and facilities, these economic considerations are of prime concern to the user who desires communications at the lowest possible rates and also to the telephone companies who have a responsibility to ensure the economic viability of their operation.

The competition provided by the existing market structure for private services has contributed to the development of new service offerings. However, the corresponding technical developments needed to meet these market requirements have largely been the result of research and development associated with public telephone service.

Regional and national policy, developed mutually by government and industry, would be beneficial in providing the telephone companies with economic and social guidelines around which research and development could be planned.

4. Pricing

Although pricing of telecommunication services will be discussed in greater detail in Telecommission Study 7(ab), some facets deserve mention in this paper.

The possibility of subsidization of private services with revenues from public telephone service is an understandable concern not only to telephone users but also to competitors in the private service market. The implications are, of course, that telephone users might be helping to pay for private services and that the subsidy might give the telephone companies an unfair competitive advantage.

It is worth noting that the opinions of users and competitors are different. For example, some users of private services have maintained that the rates for their private services are too high. Competitors, on the other hand, have voiced the opposite argument - prices are too low and are being subsidized by monopoly service revenues.

The telephone companies firmly believe that their participation in both monopoly and private services markets results in lower prices and better service to all telecommunications users.

D. PROBLEMS OF REGULATING PRIVATE SERVICES

1. Regulation of Rates

Regulation of rates reduces the ability of suppliers to react quickly to changes in market conditions. The inflexibility of tariffs and the associated administrative procedures could reduce many of the benefits which might otherwise be derived from competition. We believe that it is desirable to allow freedom and flexibility in setting rates, so that the benefits of competition can be realized.

Rate regulation does not lend itself readily to the meeting of special customer needs. At the present time, many "custom tailored" private services are rated on an individual "special assembly" basis. If tariffs were required for every private service of this kind, the administrative process would be complex and the benefits doubtful. On the other hand, if customer needs were made to conform to a limited number of tariff offerings, then some specialized requirements could not be satisfied.

In addition to the previous problems, there is a further difficulty in establishing a basis for determining satisfactory rates and for identifying cross subsidization and illegal price discrimination. Rates are influenced variously by competition, value of service, and costs. The use of costs as the primary basis for regulatory decisions is at best a highly arbitrary procedure.

That is not to say that cost determination does not have some useful purpose but rather to emphasize the attendant problems and the limited usefulness of such a process in setting prices for individual services.

The determination of the costs of a specific product that shares common production facilities introduces some serious practical limitations. Exact costs cannot be completely determined for any one service. Studies by the U.S. Telecommunications Industry illustrate the problems of cost separations. Each time a study is undertaken, a different cost separation technique emerges. The feasibility of separations is currently under investigation in Canada.

2. Approval of Private Service Undertakings

Regulation of expenditures for private service undertakings is subject to many of the same criticisms discussed above. Market demand is the best indicator of the desirability of new investments in private services. Because of this, and the fact that investment decisions are vital to the economic viability of the companies concerned, control of capital expenditures should remain a management responsibility. Regulation of expenditures transfers this essential function to the regulator. Furthermore, it does not provide an effective substitute.

The security of information in competitive situations is jeopardized when details of new undertakings are made public through regulatory procedure.

3. Regulation of a Competitive Market

Although the common carriers are the major competitors in the provision of private services at the present time, there are other suppliers active in specific segments of the market. Private mobile radiotelephone service, Radio-Paging and the supply of data terminal equipment are examples of such private services.

Regulation in these latter markets reduces unnecessarily the benefits of competition. It also becomes less effective and more complex as the number of regulated competitors increase. Therefore, we believe regulation to be unnecessary in such cases.

4. Regulation Jurisdiction

The constitutional aspects of Federal versus Provincial regulatory jurisdiction are being examined in more detail in Telecommission Study 1(a).

The problems of multiple regulation are clearly evident in the United States. Recognition of these and the importance of taking action to avoid their repetition in Canada is essential.

While these problems are not specifically confined to private services, there are certain aspects which have special meaning due to the competitive nature of these services. Consider, for example, the position of those carriers who, while subject to Federal regulation, must compete for intra-provincial services with carriers who are subject to provincial regulation. These and similar jurisdictional problems will require much study by both federal and provincial agencies as well as the common carriers.

E. SUMMARY

The following statements summarize the views of Trans-Canada Telephone System members concerning problems relating to the regulation of private services:

1. The minimum amount of regulation required to achieve regional and national objectives will provide the general control best suited to Canadian needs. Such regulation should avoid the problems created by dual regulation.

2. Most private services in Canada have been supplied in an oligopolistic setting with few regulatory controls. We believe that this arrangement, which has generally met customer needs and benefitted telecommunication users, should continue.

3. A commitment to free competition for some private services eliminates the need for regulation. The provision of customer terminal apparatus is an example of this type of service. We believe this situation should continue without rate regulation.

PART THREE

REPORT OF THE

"IN-HOUSE" PROJECT TEAM

CHAPTER I

Introduction

Purpose of the Study

In September 1969, the Minister of Communications authorized an extensive study program to examine Canada's telecommunications industry. This "Telecommission" has organized some 50 studies to explore many of the legal, economic, technological and environmental aspects of telecommunications in Canada.

This Study is one of several in Section 8 and it has, as its primary purpose, the objective of identifying and examining the problem areas surrounding the regulation of private line services supplied by the telecommunications carriers.

Background of the Study

Canadian telecommunication companies were originally chartered by the federal and provincial authorities to provide telephone and telegraph services to the public. These services, which form the basis of the public telecommunications system, have been traditionally viewed as a natural monopoly and the exercise of the franchise has been accompanied by various degrees of regulation to protect the public interest.

In addition to the need for public telephone and telegraph services, there has always been the need for certain private telecommunication services. These are primarily of a commercial nature and they are often leased to individuals, businesses, or governments on a contractual basis. These private line services were originally dedicated wire lines leased to such customers as newspapers and stockbrokers for direct voice or telegraphic communications. However, in recent years the volume and variety of private line services has been expanding at a very rapid rate. Today these services include teletypewriter exchange, program transmission for radio and television and data transmission to name only a few.

There has been, therefore, a traditional distinction between public and private line services. It is interesting to note, for example, that in its first annual report in 1880, the Bell Telephone Company of Canada reported Private Line rentals to be $5,023.01.[1]

1 R.C. Fetherstonhaugh. Charles Fleetford Sise 1834-1918. Montreal Gazette Printing Company Limited, 1944, p. 186.

In general, the development of many of the private line services has taken place in a competitive environment and, in some regulatory jurisdictions in Canada, they are outside the direct purview of the regulatory authority. Therefore, as well as the distinction between public services and private line services there has often been a parallel distinction between regulated and unregulated services.

There is a close interrelationship between a telecommunication carrier's public and private line services. The services are often provided over common facilities and some of the private line services tend to become indistinguishable from public services. Consequently, it is difficult to formulate a precise definition which would permit careful examination of the issues. However, regardless of the definition, the distinction that has existed between the two types of services, and the related dichotomy between regulated and nonregulated services in some jurisdictions, have led to a variety of issues concerning the regulatory environment for private line services.

Scope and Limitations of the Study

The examination of the issues and problems surrounding the regulation of private line services could easily lead into a study of considerable proportion. The broad issues of competition versus monopoly; the legislation and regulatory approaches of other countries; and, the role of regulatory bodies are subjects which could be considered relevant to this study. The project team has recognized, however, that these subjects are the focus of other Telecommission Studies. Therefore, the scope of this study has been carefully chosen to examine private line services and specific issues relating to their regulation. It has avoided a broad excursion into the other areas.

In line with this position the following terms of reference were adopted for the study:

1) A definition of the scope of the study and review of some of the "private line" services offered by the carriers and an overview of relevant financial and commercial characteristics.

2) Reference to private line technology, present and future, with a view to identifying its relationship to the study.

3) A description of the regulatory situation relative to private line services in Canada.

4) An identification of problem areas faced by both the users and suppliers of private line services.

5) A presentation of some of the basic regulatory alternatives with respect to private line services, and a discussion of how these would contribute to the solution of problem areas. (i.e. a definition of the various possible objectives of regulation).

6) A presentation of points of view that favor, or do not favor, regulation of private line services. This will serve to identify potential problems and benefits arising from regulation.

7) An analysis of the problems and regulatory alternatives relative to private line services.

Relationship to other Reports

The inquiry into the problems relating to the regulation of private line services has been undertaken by project teams which represent both the telecommunications carriers and government organizations. This study is being undertaken by an "In-House" project team comprised of representatives from government departments, government agencies and regulatory commissions. Parallel studies are being carried out by representatives of CN/CP Telecommunications and the Trans-Canada Telephone System.

All the study groups have used the same terms of reference as their general guide for the study; therefore, it is anticipated that there may be some overlap in the factual background contained in the three reports. During the course of the studies the necessary research was discussed by the Liaison Officers for the three study groups and an effort was made to share data where possible.

Project Team

The "In-House" project team is comprised of representatives from government departments and agencies. They are:

Mr. E.R. Bushfield - Department of Communications

Mr. A.B. Donaldson - Department of Communications

Mr. J. Hanley - Canadian Transport Commission

Mr. K.T. Hepburn	-	Department of Communications
Mr. R.E. Santo	-	Canadian Broadcasting Corporation
Mr. R. Thérrien	-	Canadian Radio Television Commission

Although these members of the team contributed to the report and participated in its preparation and review, they do not necessarily agree to every statement made in it.

Organization of the Report

This introductory chapter has stated the purpose and scope of the study and has presented a brief background for the subject area. Chapter 2 is directed toward the presentation of the concepts of private line services and information which will provide an appreciation of the significance of private line services of the telecommunications carriers. Chapter 3 surveys the current regulatory setting at both the provincial and federal levels. Chapter 4 is directed to an examination of the problem areas that could possibly be attributed to the regulatory environment for private line services. It also attempts to establish some of the basic regulatory alternatives that are available with respect to these services. In the final chapter the project team has presented a summary and discussion of the major points that emerged during the study.

CHAPTER II

Private Line Services

The Concept of Private Line Services

Historical Background. The terms "Private Wire" and "Private Line" have been associated with the communication industry almost from its birth. Originally telegraph and voice communications utilized technology that required a single wire between two communication instruments and an earth return to complete the circuit. As the public networks developed, switchboards became more complex and the improved transmission standards required a second wire to extend the distance from the switching point at which a subscriber could be located. However, needs existed at that time, as they do today, for point-to-point communications on a continuing basis between separate locations such as a downtown office and a warehouse, or between two company offices in separate cities.

Over the years, as communications developed and networks became more extensive, the needs for point-to-point communications also expanded, but not at the same rate. Expansion of commercial organizations to multi-plant operations in locations across the country, maintained continuous pressure for the development of communications services that would carry a substantial volume of traffic between predetermined locations.

Initially, there were substantial savings to be realized in not having communication services interconnect with the manually operated switchboards or, later, with the mechanized switching systems that were required to serve the burgeoning growth of random communications traffic. Some of these savings were passed on to the users, since there were mutual benefits involved. From the users' point of view, the services were available to him as required, and leasing them on a monthly basis made his communication costs more controllable.

In the telegraph field, users could lease private line facilities for particular portions of a day throughout the monthly period. For instance, brokers and newspapers realized certain advantages with services that could be leased 4 hours, 8 hours or 24 hours per day. In these cases, the costs of service to users bore some relationship to its value.

Private line service users have been able to experiment to some degree with various kinds of telecommunications equipment, which was later standardized by the carriers for broader applications. The Telex and TWX networks grew out of the expanding use of teletype equipment on a private line basis. At the present time broadband service, i.e.service involving transmission over facilities whose bandwidth exceeds that of a single voice channel, is being developed under

private line circumstances. Similarly, the integration of radio circuits into the public voice network occurred after a number of applications on a private line system had been tried. However, private line services cannot be considered a prime source of trends in the development of the public switched network.

From a regulatory point of view, private line services have not generally attracted much attention, since the services were usually established on a contractual basis between consenting parties. It has only been during the past few years that private line systems have grown in size and scope to a point that increasing consideration has been given to them, usually to ensure that the rates appropriately reflect the costs of providing them.

As may be seen in the following section, the meaning of the term "private line services" is becoming less clear from the point of view of the user, supplier and even the regulator.

Current Concepts of Private Line Services. At this point in time the term "private line service" is applied to services that range from the simple point-to-point telephone facility terminated by two telephone sets, to complex international networks such as those used by General Motors, employing electronic switching and dedicated circuits terminating in many points in Canada and the United States. The term also applies to the broadband cable or microwave channels used by a broadcaster to serve a network or family of TV stations, as well as studio-transmitter facilities; it can include the communication facilities linking a dispatcher with a private land mobile radio transmitter used to communicate with a fleet of vehicles; it can also refer to a facility that connects an exchange telephone number in one city, which can be accessed by any telephone subscriber in that city, to the premises of the user in another city.

Thus, the term "private line service" refers to a whole family of communication services which serve the non-network needs of the user. These needs are often much less random than the normal telephone traffic. Consequently, such traffic patterns can be more accurately forecast and have less requirement for the hierarchical switching system that serves the public network carrying the random traffic.

In order to fully appreciate the possible regulatory problems that might be associated with private line services, it was necessary to consider some of the various concepts for these services. A number of approaches to defining private line services were identified during the study. These have been presented and commented upon below.

(1) "Private line services are those communication services which are not subject to regulation".

There is nothing conceptual about this definition and it is extremely vulnerable to changes in legislation, some of which have occurred during the preparation of this report.

(2) "The term 'private line services' should be avoided and the services described, more appropriately, according to their function".

The proliferation of uses and the variations involved would soon make such a categorization impossible.

(3) "Private line services are those telecommunication services which are provided to a customer by means of facilities that are exclusively dedicated, for any period of time, to serve his telecommunication requirements".

This definition is too general and conflicts with the growing requirement for shared use of private line facilities among users who have common needs that are not met by use of the public network. A case in point is data-transmission requirements. In the higher speed ranges (over 2400 bits per second) switched communication networks are being provided by carriers as private line services even though they are available to any number of users on a time-shared basis and are billed on an 'as used' basis.

(4) "Private line services are those telecommunication services which are provided to a customer by means of facilities that are exclusively dedicated, for any period of time, to serve his telecommunication requirements, and which are not interconnected to the system by which the carrier provides services to its customers generally".

This definition, while similar to (3) above, makes the significant distinction that private line services are not network connected. It appears that this definition has closely approximated the realities of

private line services in the past; however, its viability seems to have been eroded by developments in the industry. Private Line Exchange services, mentioned above, and the introduction of package private line offerings that include exchange connected services are examples of the type of development that has contributed to this erosion.

(5) "Private Line Services are a rating concept."

This approach sets aside the technology involved in providing the services, and considers the traffic generated by the user. The basic assumption of this definition is that a carrier can realize savings if a user can guarantee and contract for telecommunication time between predetermined or preselected points. Among other things, this removes the need to apply the forecasting techniques used in planning the public network, which are based on a statistical analysis of random traffic to determine the probability of such traffic occurring on certain routes, and in what quantity and timeframe.

As long as a supplier can show that he can realize certain economies when the user provides such forecasts of traffic patterns, then private line services may be defined as a rating concept designed to recognize such economies and reflect them in appropriate rates to the user. On the other hand, if these needs can only be served by more expensive custom-designed services, it is expected that the associated rates to those using the private line services would reflect the higher costs involved.

(6) "Private Line Services are a family of services which provide guaranteed quantities of information capacity, to a user between any number of specified points of his choosing and at times of his choosing."

This definition avoids much of the specificity in the other concepts; consequently, it has the advantage of minimizing the number of conceivable exceptions. It also provides for the idea that the rates for these services could reflect economies of scale when available, or premium charges as appropriate.

It would, of course, be desirable to arrive at a single definition for private line services, however, it was recognized that many of the characteristics of private line services implicit in the various concepts were worthy of note. Therefore, they have been presented here and no specific definition has been selected for this report.

Scope of Private Line Services

Most telecommunications carriers in Canada provide a range of private line services that vary both in price and in scope of service. Any detailed examination of the variations in scope would be a travelogue through the imaginative ingenuity that users have employed in fitting private line service offerings to their communication needs. This would then have to be balanced against the measure of success that the communication suppliers have enjoyed in creating terminology to fit new uses and allocating an appropriate rate to charge for the service.

Technically, the private line services available from carriers are limited only by:

(1) The performance characteristics of the facility providing the private line service;

(2) The availability of suitable interfacing equipment to terminate the facility.

With respect to (1) the maintenance of circuits used to provide private line service varies widely between communication companies and also within the network of any particular supplier. Private line circuitry used to serve voice needs will, on an "as found" basis, pass voice traffic with quality that ranges from acceptable to very clear. The same channels may not be suitable for digital data at speeds of over 300 bauds with an acceptable error performance. However, most carriers will do their best to either select or condition such circuits to pass information at speeds up to 2000 bauds at little or no expense to the user. Speeds beyond this limit can only be achieved with special conditioning and maintenance and the installation of equipment for which appropriate charges are applied.

The most important factors affecting the scope of private line use are the policies of the individual communication suppliers and their associated rating structures. Of these, the rating structure is particularly complex and requires considerable experience on the part of the user to ensure that he is getting the best value for his expenditures.

Consider, for example, a private line between two points to provide voice transmission. If the two points are 50 miles apart, most telephone companies in Canada will provide the service at a line cost of $4.00 per mile per month, together with appropriate terminal charges. However, if more than one circuit is required, some carriers will provide a "price break" for quantities of 12, 24, 60 and 120 circuits, whereas other companies will not. This pricing arrangement, known as Telpak, results in a line rate of slightly over $2.00 per circuit per mile for groups of 12 circuits, diminishing to a line rate of .58¢ per circuit per mile per month if 120 circuits are required. Coupled with this rate, of course, is a limitation on the number of locations where such Packs may be terminated Thus, such rating arrangements are usually available only between larger centres of population.

To the above is added a "declining line rate with mileage" rating approach. All the telephone companies participating in the Trans-Canada Telephone System will provide a single voice-circuit that reduces from approximately $4.00 per mile per month at a 50 mile distance to approximately $1.00 per mile per month if the distance is in excess of 3000 miles. Thus, beyond a certain distance, circuits are more economically purchased on an individual basis than in groups of 12 or 24.

The scope of voice private line service is relatively easy to define, though it has a complex rating structure associated with it. In the data transmission field, however, both the CN/CP Telecommunications and the Trans-Canada Telephone System provide a switched broadband private line system that can be shared by users On these systems it is not possible to transfer traffic between users, a factor which preserves the definition of private line for purposes of deriving rates. Since data transmission may be more precisely defined and categorized than voice or analog transmission, the rating structure is much less complicated and results in a declining rate per bit with increased speed of transmission. Though the switched data systems are relatively new, an attempt is being made to provide private line service coincident with the needs of the user.

Following is a short list of some of the major and most frequently used private line services available today:

- Private Line Voice Service: This is described above.

- Private Line Teletype: This service is similar to private line voice, with the exception that the input and output terminals are teletype machines or equivalent; because of its lower bandwidth requirement this service is offered at a lower rate.

Program Transmission Channels: These are used in the broadcasting industry for audio and/or video transmission, usually between studio and transmitter locations or for intercity services of a particular nature.

Data Transmission Services: As mentioned above, these include a very large range of communication facilities to handle varying data transmission requirements; though generally rated on a basis of increasing dollars per unit of distance with increasing bandwidths, some consideration is being given to rating principles that involve time, speed and distance on a per message basis.

Relationship of Private Line Services with Technology

There are two ways of viewing the relationship of private line services with technology. On one hand, it is possible to place the emphasis on the value of service and ignore the technology that is used to provide it. This viewpoint may be particularly relevant to the fact that any given private line service may use a whole range of communication facilities: terrestrial microwave systems, communication satellites, and buried coaxial cable. On the other hand, technology cannot be ignored completely, since it is fundamental to the cost of providing the service and the rates that are charged for it. Therefore, although there is no emphasis in this study on the technology related to private line services, there are some considerations that deserve comment.

It is possible to state that many of the private line services used now, and in the foreseeable future, can be served by the same technology used by the systems serving the public network. However, the growth in the use of private line services has not been coincident with the growth of regular network services. Thus, when improved technical efficiency was required to serve the public network through the use of microwave links, for instance, a similar need was not immediately reflected by the smaller number of private line voice services. Thus, it has been quite feasible to prolong the life of certain fully depreciated cable routes that have low maintenance costs but are unsuitable for network service, by using them to handle private line services. Direct costs in these cases would be difficult to deal with. Such use would apply particularly to private lines of less than 300 miles in length.

Another factor is the contribution that guaranteed traffic capacity makes to the planners of telephone company systems. Private line requirements, particularly as they increase in quantity, can be given circuit assignments in transmission carrier systems to fill up "gaps" around the circuits assigned in patterns for network switching purposes, and often resulted in more efficient performance of the carrier system.

Though only a modest case can be made for considering the impact of technology in the regulation of private line services, it would be unrealistic to ignore it completely. It is possible that in the future, when much greater use is made of the more expensive broadband facilities for private line services, the net impact will be significant.

Satellite Technology. The impact of satellite technology and a domestic communications-satellite system on private-line usage is speculative. There appears to be some potential for Economy, as compared with augmenting terrestrial systems for communications between widely separated points in sparsely populated areas, such as the far north. The regulatory processes under these circumstances will require communications policy objectives in order to deal with the associated allocation of costs and the derivation of rates.

Significance of Private Line Services

Any regulatory issues arising from the provision and use of private line services must first be considered in the context of their significance to the total telecommunications spectrum. There are no easy, clear-cut means of determining the importance of private line services in total, since the variety of the services involved, and the conditions under which they are provided, differ significantly among the telecommunications carriers in Canada. In addition, there is the influence of the communication systems in the U.S. interacting with users in Canada through corporate communication links which usually reflect different regulatory practices.

It does seem clear, however, that when used as a rating concept by the carriers - the significance of private line services will be whatever they wish to make it.

Historically, the growth of telecommunications in Canada has been served by the vast public networks established by the telecommunications industry. However, as pointed out earlier, there has always been a requirement for predictable point-to-point traffic which has been satisfied by what appear to be lower cost facilities - from the point of view of the users. The growth in the private services market has been particularly sensitive to rates. The market was primarily that small segment of the total telecommunications market that was better handled by some alternative to the public network.

For instance, as late as 1962 and 1963, the Trans-Canada Telephone System had very few long haul circuits extending across the country. With the exception of special requirements such as national defence and radio and television services, the majority of long private lines were used for purposes other than voice, such as teletype. Thus, railway communications organizations provided the majority of the longer private line circuits. At the same time, "short private line services", extending up to 500 and 700 miles in length, were more heavily oriented to voice communications, and the majority of this market was served by the telephone industry. One significant reason for this condition was that voice communications beyond 700 or 800 miles received very few "price breaks". The only one in existence at that time was Wide Area Telephone Service (WATS). As late as 1966 it was cheaper to subscribe to a WATS circuit, which is provided on the public network, for voice communications from Toronto, Montreal or Ottawa to Regina or points further west, than it was to use private line voice circuits. As a result, users would contract for WATS circuits to reach western points, terminate them on their switchboards, and, if necessary, dial them up in the morning and operate them all day as a private line. This type of use tended to increase switching costs and, to offset the trend, the TCTS introduced a rate for private line voice that declined with mileage.

This illustration is used only to indicate that the growth of the private line market will depend significantly on the inability of the public network to handle changing needs. However, within the private line market certain competitive forces are in action, and there is a trend towards introducing decreasing rates for bulk purchasing. Because of the arguments, both pro and con, on this point, there has never been universal agreement within the industry to provide public network communications at rates that are discounted with large scale purchasing. The introduction of WATS is a step in this direction although it is not available from all telephone companies.

Significance of Private Line Services for the Carriers. Due to the size and inertia of the public network, updating it with new technology to handle new needs is usually undertaken when a new requirement has been reasonably well established. Developing this market can be done under the concept of private line services. Television channels, for instance, were introduced as private lines and were extended across the country to serve the broadcasting industry. This expansion pushed the development of new technology, including microwave carrier systems, and made it possible to provide capacity for other private line services for the incremental cost of expanding the system. Thus, Picturephone is being considered on a restricted basis. Similarily, broadband data transmission techniques have been introduced on a private line basis, utilizing this carrier technology. As the market for these services grows, decisions can be taken regarding their inclusion in the public network.

From the CN/CP point of view, the majority of their telecommunication services are of a private line nature. The growth of their market relies, to some extent, on the development of services attractive enough to coax users away from the public network as well as to serve new and developing needs. The market can, therefore, be influenced by the effectiveness with which the telephone companies meet these needs with the public network.

From information supplied by both CN/CP and the Trans-Canada Telephone System, it would appear that the two carriers almost share the private line market on a 50-50 basis. In 1969, the Trans-Canada Telephone System reported a revenue of $58.3 million, whereas the CN/CP revenues were reported as $68.6 million. The TCTS figures are only approximate and, if anything, probably pessimistic, since they do not include intra-provincial private line services, or private line circuits such as foreign exchange, tie trunks and circuits leased to other carriers. (See Appendix B). The Trans-Canada Telephone System revenue for private line represents about 5% of total operating revenue derived from message toll and private services. In spite of a growth in private line services of nearly 15% per year, the impact on the total operating revenue remains constant due to the corresponding growth in total operating revenue for TCTS.

Statistics in Appendix B reflect the revenue positions of both CN/CP and the TCTS with respect to private line services.

CHAPTER III

The Canadian Regulatory Environment for Private Line Services

Jurisdiction

In Canada, the principal regulatory control over a telecommunications carrier is exercised by either a federal or a provincial regulatory body. Certain telephone companies come under federal jurisdiction, others fall under provincial jurisdiction. Similarly, some of the railway telecommunication carriers fall under federal jurisdiction while others are regulated by the provinces.

This type of individual jurisdiction over carriers relates, however, primarily to the quality of service and the economic aspects of the carrier's operations. Other matters, such as the radio frequency spectrum and the crossing of navigable waters, are completely under federal jurisdiction. Furthermore, a carrier may have to deal with several federal agencies, provincial departments, or municipal authorities with respect to crossing roads, highways and railways.

Several statutes are relevant to the federal government's jurisdiction, principally (a) The Railway Act (b) The Radio Act, (c) The Telegraph Act, (d) The Canada Shipping Act, and (e) various Acts of Incorporation. For the purpose of this study the federal legislation of principal importance is the Railway Act, which provides the Canadian Transport Commission with the authority to approve tolls of telecommunication companies within the legislative authority of the Parliament of Canada.

The provincial regulatory powers are found in various provincial Acts and are exercised by provincial regulatory boards and/or executive bodies. A summary of the important legislation in this area, for each of the provinces, has been prepared in conjunction with Telecommission Study 1(a).

Significance of the Legislative Situation

The nature of the current legislative situation in Canada points to two facts which are significant for this study of the regulatory problems associated with private line services. First of all, since there are various jurisdictions, there will not necessarily be a uniform approach or philosophy with respect to the regulation of private line services. Secondly, action taken by federal regulatory authorities is, at present, limited to companies under their jurisdiction. Of course, in matters related to radio facilities, this jurisdiction covers all companies.

The significance of these two points is related, of course, to the fact that private line services have developed in a competitive environment. Public telephone services are treated as a natural monopoly and each carrier has a franchise area which is universally respected by other telephone companies. However, this franchise does not necessarily apply to private line services. Such services may be available in a given area from two or more carriers and also from entrepreneurial sources. This type of situation is particularly identifiable in areas where the railway carriers, who are large suppliers of private line services, operate in competition with the telephone companies. Thus, one carrier, operating under regulation, may be offering private line services in exactly the same area where another carrier is offering the same service under dissimilar regulatory conditions.

Summary of Jurisdictions

A Summary of the federal and provincial regulatory bodies and the major telecommunication carriers under their jurisdiction is presented below.

Federal Jurisdiction

Regulatory Body	Major Regulated Telecommunication Companies
Canadian Transport Commission	1. Bell Canada
	2. British Columbia Telephone Company
	3. The Bonaventure & Gaspé Telephone Co. Ltd.
	4. Canadian National Telecommunications
	5. Canadian Pacific Telecommunications
	6. Québec North Shore and Labrador Railway
	7. The Algoma Central and Hudson Bay Railway Company
Department of Communications	All users of the radio frequency spectrum.

Provincial Jurisdictions

	Regulatory Body	Major Regulated Telecommunication Companies
1.	British Columbia Public Utilities Commission	Okanagan Telephone Co.
2.	Alberta Public Utilities Board	Alberta Government Telephones
3.	Manitoba Public Utilities Board	Manitoba Telephone System
4.	Ontario Telephone Service Commission	Northern Telephone Ltd. Thunder Bay Telephone Department
5.	Québec Public Service Board	Québec Telephone Co.
6.	New Brunswick Board of Public Utilities	New Brunswick Telephone Co.
7.	Nova Scotia Board of Commissioners of Public Utilities	Maritime Telephone and Telegraph Company
8.	Prince Edward Island Public Utilities Commission	Island Telephone Co.
9.	Newfoundland Board of Commissioners of Public Utilities	Newfoundland Telephone Co. Labrador Telephone Co.
10.	Government of Saskatchewan	Saskatchewan Telecommunications

Current Regulatory Situation

In view of the significance of the various regulatory approaches to the regulation of private line services, this study attempted to establish the current situation in each of the major jurisdictions. A request for relevant information was directed to both the regulatory bodies and the regulated telecommunication carriers. This information is presented in the following sections.

Canadian Transport Commission

The regulatory situation with respect to private line services provided by federally regulated carriers is in a period of change. During this study, legislation was introduced into the federal Parliament for changes to the Railway Act concerning the regulation of these services. Therefore, it is necessary to describe the current situation in terms of the immediate past as well as the immediate future.

In the past, the Railway Act, provided the Canadian Transport Commission the authority to approve telephone or telegraph tolls charged by companies to which the Act applied and to revise those tolls from time to time. This authority did not extend to private line services; however, the Commission could regulate a company's overall rate of return.

Although the Commission had no power to regulate private line services directly, it was very much concerned that the prices charged for such services did not result in a burden upon the regulated services. Therefore, it required companies, such as Bell Canada, to furnish evidence of revenues and costs for such services, when they were applying to the Commission for increases in their earnings on regulated services. Obviously, if the Commission was not satisfied with the level of earnings on such unregulated services, it could not directly order the telecommunication company to increase its charges for such services. However, it could limit the amount of increase applied to the regulated services and suggest that the company explore ways and means of obtaining any shortfall of revenue from unregulated services and other investments. 1

1 The judgment of the Railway Transport Committee, dated September 25, 1969, concerning application by Bell Canada for a general rate increase is worthy of note. In Section 7(g), of the Judgment the Committee stated:

> "In nonregulated services, certain rate increases were put into effect in 1969; our decision herein does not preclude Bell from seeking higher earnings through sources of revenue or income which are not involved in the application.

During 1969, in response to various developments in the telecommunications industry, in particular the increasing complexity of the relationship between computers and telecommunications, the Minister of Communications introduced an amendment to the Railway Act to remove the private wire exemption.[3] Bill C-11 was passed by the House of Commons on January 28, 1970, received Royal Assent on March 17, 1970, and came into force on August 1, 1970.

The Canadian Transport Commission now has the authority to regulate private line services, within the scope of the Railway Act, of the telecommunication carriers under its jurisdiction. It should be noted that this scope relates almost entirely to economic factors.

The Department of Communications

Radiocommunications in Canada are subject to the jurisdiction of the federal Parliament. Under the provisions of the Radio Act, the Minister of Communications may prescribe classes of licences and of technical construction and operating certificates. The Minister may issue licences in respect of radio stations and radio apparatus, to the extent that they are not broadcasting undertakings, and issue technical construction and operating certificates in respect of radio stations and radio apparatus, to the extent that they are broadcasting undertakings. The Minister may issue these licences and certificates for such terms and subject to such conditions as he considers appropriate for ensuring the orderly development and operation of radiocommunication in Canada.

In addition, the Radio Act provides that the Minister of Communications shall regulate and control all technical matters relating to the planning for and the construction and operation of all radio facilities, and may make regulations pertaining to these responsibilities as set out in the Act.

Under the terms of the Government Organization Act, 1969, the Minister of Communications has the responsibility of promoting the establishment, development and efficiency of communications systems and facilities for Canada.

2 For a full treatment of the background of Bill C-11 see: Standing Committee on Transport and Communications. Minutes of Proceedings and Evidence, House of Commons, Nov. 18, 1969.

Provincial Jurisdictions

The Provincial Regulatory Boards of Commissioners were asked for information about the extent to which provincial legislation permitted them to regulate the private line services of telecommunications carriers under their jurisdiction and, where appropriate, the manner in which any such authority was exercised. In particular, information was requested on:

> The particular sections of provincial statutes authorizing the Commission (or Board) to regulate private-line services;
>
> The general approach adopted in exercising such authority;
>
> Specific regulations and requirements applicable to private-line services, indicating whether rates are submitted for approval or only for information; whether there is a requirement to identify investment and costs associated with private-line services; and whether regulations apply to all, or only some, of the services offered by the carriers;
>
> Any regulatory factors, such as approval of capital expenditures or new service offerings, which are applied to the carriers' operations as a whole giving, in effect, a degree of regulatory control over the private-line offerings.

The substance of the replies to these queries is given in Appendix A, but may be briefly summarized as follows:

> In Newfoundland rates for all services, public or private, must be submitted to the Board of Commissioners of Public Utilities for approval. The Commission exercises an overall regulatory control over the telephone company on the basis of a reasonable return on the rate base. It must also approve all new projects and undertakings in excess of $25,000.
>
> Legislation in Prince Edward Island does not indicate specific requirements and regulations applicable to any particular type of service. In general, the Public Utilities Commission considers that regulation of the utility applies to all services offered by the utility and no service to one class of customers is allowed to be subsidized by other customers. A utility also requires Commission approval on new construction and extensions and improvements costing more than one thousand dollars.

In Nova Scotia, private line voice service is considered an integral part of the telephone service and is subject to regulation. Other private line services are not subject to regulation but the Board of Commissioners of Public Utilities does require assurance that there is not subsidization of non-regulated services by regulated services. The Public Utilities Act requires approval of new construction in excess of $5,000.

The New Brunswick Board of Commissioners of Public Utilities has never made any regulations concerning private line services; however, it has indicated policies in individual situations. These decisions have accepted the view that the Board had no regulatory power over a private line service that was not tied in with the public telephone service and that was being provided on a competitive basis. No private line rates are filed with the Board; however, they are available for examination.

The Ontario Telephone Act makes no reference to private line services as such; nevertheless, the wording of the Act could be construed as providing for the regulation of these services if they were associated with a telephone exchange service. The Ontario Telephone Service Commission has not actively sought to regulate the private line leases of the telephone companies under its jurisdiction. However, it has regulated, by general Order, some of the more common and frequently required services.

The Québec Public Service Board has full regulatory jurisdiction over private line services. At present these are dealt with individually. However, a general order on the subject is expected to be proclaimed soon. Rates are submitted for approval and the telephone companies must specify investments and relative costs associated with private line services.

The Manitoba Telephone System does not submit private line rates to the Public Utilities Board, nor does it seek approval of the Board for new undertakings.

Saskatchewan Telecommunications, or "Sask Tel", is a Crown Corporation of the Province of Saskatchewan, and is not subject to a formal regulatory authority. It is self-regulated through its cabinet-appointed directors and responsible minister. Sask Tel must publish its rates and, when a private line service is well established and a firm offering of the service can be made, the rate is also published. The corporation must seek approval from the provincial government for major financial transactions and major tariff changes.

In Alberta, the Public Utilities Board does not appear to have dealt with the matter of regulating private line services and there may be some question as to the adequacy of the legislation to cover such services. The telephone companies do not submit rates for private line services, either for information or approval, nor is there a requirement to seek approval of new service offerings.

In British Columbia, most of the private line services are provided by B.C. Telephone Company or CN/CP Telecommunications, which are both federally regulated. Therefore, the involvement of the Public Utilities Commission with these services is quite limited. In general, the Commission does not differentiate between public or private line services and regulates on an overall basis. It also requires new service offerings to be submitted for approval.

CHAPTER IV

Issues Concerning the Regulation of Private Line Services

Identification of Problem Areas

One of the primary objectives of this study was to identify problem areas that could be attributed, totally or in part, to the regulatory environment for private line services. These problems have been assessed from the perspective of both the users and the suppliers of such services.

To achieve this objective, the project team attempted to obtain inputs from any interested party. These inputs were received in a variety of ways: there was direct input material for this study; indirect inputs from other studies; and informal communication through members of the project team. In addition, the project team conducted its own research to determine existing or potential problem areas.

In view of the diversity of the inputs for this chapter, no attempt was made to organize the material according to source. Instead, the material has been synthesized to identify the major points that have emerged.

Possible Problem Areas for Users of Private Line Services

Lack of Rate Regulation. An absence of rate regulation for private line services is often alleged to be a real or potential problem for users of these services. Without any regulation of rates the carrier is able to set specific tolls for the service, and the user has no recourse to any regulatory body.

The seriousness of this alleged problem is proportional to several factors, the most salient of which is the degree of choice open to the user. Generally, the absence of rate regulation has been taken to indicate that there are several sources of supply for the private line services. For example, in many areas of Canada the customer may obtain private line services from the telephone company or from a railway telecommunications carrier. In some situations the user also has an alternative of constructing and operating a private system. However, unless the system involves radiocommunications there is generally a barrier associated with obtaining necessary rights-of-way. Furthermore, the Department of Communications has recently requested many potential users of private radio systems to obtain the service, if possible, from the telecommunications carriers.

There are considerable limitations to the viability of the basic competitive situation between the telephone companies and the railway carriers. For example, there is often an equivalence in rates between the TCTS and CN/CP Telecommunications for a private line service. Furthermore, in the determination of revenue requirements for special private line services, the carriers sometimes recognize the cost of the users' alternatives and reflect these in their own rates for that service.

The oligopolistic situation does not apply to all services or in all parts of Canada. Therefore, it is dangerous to rely upon it as a means of insuring fair and reasonable rates for private line services. The choice between a telephone company and a railway carrier is generally restricted to inter-city facilities. A user who requires private line services within a major urban centre is usually faced with obtaining these services from the telephone company serving that area.

Another relevant factor which is often referred to in this context is that the telecommunications carriers are not completely without restrictions. While the Regulatory Board may not regulate specific rates for private line services it often casts a critical eye on these rates when examining requested increases in rates for the Public Services. The purpose of this scrutiny is, however, usually to insure that the private line rates are not too low, which would place an undue burden on the public services.

Cross Subsidization. The question of cross subsidization between regulated and unregulated services is an issue which invariably arises. It is not a problem unique to the users of private line services. As a matter of fact, it is more often assumed to be a potential problem for the users of the public telecommunications services.

The rationale for this assumption is based on the concern that any unregulated services are generally competitive in nature. Consequently, these services are apt to be priced to meet competition and therefore provide a return which is less than that provided by the public services. Furthermore, the allocation of costs, which is often the basis for determining rates, may be quite arbitrary and consequently is subject to dispute. There is often a feeling that regulation of private line services would provide a framework for examining and approving the cost allocations. In recent general rate increase applications, the intervenors have raised this issue at the public hearings and have focused on the adequacy of the returns for private line services.

The impact of the cross subsidization issue on the users of private line services is not clear. However, there exists a distinct possibility that as a regulatory jurisdiction moves to specific rate regulation of private line services, the rates may move upward rather than downward.

Pricing Policies. In the absence of regulation of private line services, there exists a possibility that a telecommunications carrier could adopt a pricing policy for a particular service(s) that would reduce the effect of competition. Any resulting elimination of the alternative sources of supply would leave the carrier in a monopolistic situation.

The fact that the two sources of supply for most major private line services are the railway carriers and the telephone companies, which are both subject to the constraints of an overall regulatory umbrella, considerably lessens the significance of such a possible problem. However, it should be recognized that private services such as those offered by a restricted common carrier for land mobile radio services or entrepreneurial Paging Services could be particularly vulnerable to the pricing practices of the large telecommunications carriers.

Technical Adequacy. Advancing technology is placing ever increasing demands on the technical adequacy of the telecommunications services available from the telecommunications carriers. This has become particularly evident for the data transmission facilities required by the computer companies, and the switching and control facilities required by electric utilities.

The services offered by the carriers are generally standardized in terms of technical parameters that have been designed to meet the needs of the majority of their users and to meet standards developed on national and international levels. The great investment in existing plant and equipment results in a considerable inertia towards rapid changes. Some users of certain private line services, such as data users, view the inability or reluctance of the telecommunications carriers to meet new and rapidly changing technological requirements in the private line service area as a serious problem.

Identification of Private Line Services. In a regulatory jurisdiction where the public services are regulated and the private line services are not, there is a grey area of demarcation between the two types of services. As a result of this situation, some services which users consider as "public" in nature may be in fact unregulated.

This type of problem can be compounded by an evolution of a service. Changes in the market for a service, which was originally private in nature, can result in that service becoming universally accepted and utilized. Such a change moves the service towards the "public" end of the services continuum. However, where private line services are excluded from regulation, particularly by specific legislation, there is generally a considerable lag in bringing the service under the authority of the regulatory body.

The teletypewriter exchange service which is offered by both TCTS (TWX) and CN/CP Telecommunications (Telex) is a service which has had this type of life profile. It was originally considered a private line service; however, over the past few years it has grown to include approximately 24,000 subscribers. From this point of view it would appear that these subscribers might be considered as receiving a public service which should be regulated.

Use of Rights-of-Way. The telecommunications carriers have acquired rights-of-way throughout their service areas for the development of their distribution systems. In general, the carriers do not appear to regard the use of these rights-of-way by others as the provision of a service.

There is one class of users of telecommunication services, namely the CATV companies, which feels that the carrier should not be permitted to prevent a joint use of rights-of-way when it is required by another "carrier". These companies take the position that there should be an effective regulatory control over the use of rights-of-way, poles, conduits, and other devices offered by the carrier so as to ensure a development of telecommunications that would be in the public interest.

Conditions of Service. In a regulatory environment for private line services, which does not provide some regulatory control over the type of service offered and the conditions under which it is offered, the users of those services can face particular difficulties.

One of the primary difficulties could be, of course, that of obtaining the type of service which meets their needs. This problem is one which has been particularly evident in the case of the the data processing companies. On the other hand, a company which has organized itself around a particular user-leased communications system looks very unfavorably on changes in the service(s) provided by the carriers that could disrupt their operations.

Conditions of service relating to interconnection of user-owned terminal devices and communication systems, and the sharing of facilities are good examples of contentious matters that could arise between users and the telecommunication carriers.

Possible Problem Areas for Telecommunication Carriers

Impact of Competition. The variety of regulatory jurisdictions in Canada and the competitive nature of private line services may result in the unique situation of a carrier offering regulated private line services in competition with an unregulated supplier of an identical or similar service.

Such a situation will exist, for example, for CN/CP Telecommunications services in Alberta. The private line services of Alberta Government Telephones are not regulated by the Alberta Public Utilities Board whereas such services offered by CN/CP will be regulated by the Canadian Transport Commission. Similar situations will exist in other jurisdictions such as New Brunswick, Ontario, and any other province in which a provincial telephone company is unregulated with respect to private line services.

The telecommunication carriers feel that this type of situation will present a serious problem if they are prevented by legislation, or by the regulatory approach of their Board, from freely meeting competition.

Cost Separations. In a modern, complex telecommunications system, the facilities which are used to provide private line services are often technically integrated with the facilities which provide public telecommunication services. The inter-city toll facilities are generally provided by high capacity microwave systems. These systems may, for example, be simultaneously carrying hundreds of telephone conversations, private line voice circuits, TWX, and network television.

Since a wide variety of telecommunication services are provided from common plant, it is often indicated by the carriers that the identification of costs associated with a particular service, or class of services, poses a problem. Regulation of private line services may require such cost separations, and there appears to be a range of views as to the difficulties involved.

Inability to Test Markets. Some of the private line services offered by the telecommunications carriers are provided on a special assembly basis and provided to the customer at a custom rate for the particular service. However, many private line services such as private line voice, Teletypewriter Exchange Services, etc. are not custom rated, but are items which are generally provided to all customers at a similar rate.

When there is no rate regulation for these services, and when there is no requirement to file tariffs for them, the telecommunications carrier has considerable latitude in testing the market for these services. The carrier might, for example, set different rates for a similar service in different areas to determine the economic characteristics of the market. It might also provide different conditions of service to different customers when it feels there is a heterogeneous market for the service.

Under a traditional regulatory environment, this type of activity would probably be prohibited or severely restricted.

Specialized Nature of Some Private Line Services. Not all private line services can be developed into a general offering that can be tariffed as to rates and conditions of service. By their very nature, some private line services are custom offerings tailored to the needs of a customer and the rates are developed for the particular situation.

There are, of course, many private line services that are suitable for a general offering such as Private Line Voice, general land mobile, and Telpak. If the carriers were required to provide all private line services on a non-discriminatory basis, it might prevent them from offering customer services which could not be offered on a general basis or at a universal rate.

Non-optimization of Service. In a similar view to the previous point, it is possible that a rigid regulatory environment for private line services could inhibit the telecommunication carriers' flexibility in providing variations in private line services, in terms of such items as special conditions of service or service options. An inhibition of this nature could lead to user-leased communications systems being developed around existing tariffs rather than a meld of services custom-designed to meet the users' unique requirements.

Regulatory Alternatives

The regulation of public utilities is a subject that opens the door on a wider range of issues for discussion and debate. No attempt has been made in this study to examine fundamental questions concerning regulation. However, in order to provide the basis for some analysis and discussion of the issues surrounding the regulation of private line services, there is a need for a brief review of the basic regulatory alternatives.

There are many ways of considering the alternatives in this study - have been considered to fall along three dimensions. These are:

(a) the type of regulation

(b) the scope of regulation

(c) the degree of regulation

The Types of Regulation. The three basic types of regulation that are often identified can be described as economic, technical, and social. It is, of course, difficult to distinguish precisely between these types or to assign relative importance to any one of them. For example, technical regulation will often have an economic impact on the carrier and regulation with social objectives in mind will invariably have some interrelationship with economic and technical factors. However, the distinction is useful at a conceptual level for analytical purposes. In this study, which focuses on only one segment of the telecommunication carriers' offerings, namely private line services, it was considered that economic and technical regulation should be particularly identified.

Economic regulation generally involves a regulatory surveillance of a wide range of the carriers' activities. The exact extent of it depends, of course, on the powers granted to the regulatory body by legislation. The spectrum of factors involved in economic regulation always includes rates and may include other such factors as financing, corporate relationships, investment, return on investment, quality and conditions of service, methods of depreciation, accounting methods, to name only a few.

Technical regulation, on the other hand, involves a direct regulatory surveillance over the technical parameters of the telecommunications systems provided by the carriers. The stipulation of minimum technical standards for particular services, technical standards for communications equipment and systems, and the approval of the technical characteristics of carrier interface requirements constitute some of the major elements of technical regulation.

The Scope of Regulation. The scope of the regulation of private line services is indicated by the number of these types of service which are regulated. It is apparent that the alternatives form a continuum which ranges from no regulation of private line services, through the regulation of several specific services, to the regulation of all such services.

This conceptual dimension of regulation may not be of much practical value when considering the general subject of regulation. However, in the context of this study, it is important inasmuch as it is clear that such alternatives do exist with respect to private line services. From the information presented in Chapter III it is apparent that the scope of regulation varies among the regulatory jurisdictions in Canada. In New Brunswick, for example, there is no regulation of private line services. In Nova Scotia, private line voice circuits are regulated whereas other private line services are not. For those companies under federal jurisdiction, following the proclamation of Bill C-11, all private line services will be subject to regulation.

The Degree of Regulation. The degree of regulation exercised over private line services is another regulatory dimension that offers a range of alternatives to the regulators. It is suggested in this study that the degree of regulation also provides a continuum of alternatives ranging from environmental regulation to specific regulation of individual services.

Environmental regulation of private line services, at least from an economic perspective, is already the general approach used in most Canadian jurisdictions. Inasmuch as a regulatory body exercises a surveillance over the overall rate of return of a telecommunications carrier or seeks assurance that the unregulated services do not place a burden on the regulated services, it is reasonable to say that there is an environmental regulation of the private line or "unregulated" services.

The polar opposite to this degree of regulation is, of course, a specfic regulation which might require the identification of the rates, investments, and rate of return for each private line offering.

CHAPTER V

Summary and Discussion

This study was undertaken to identify and examine the problem areas that might be related to the regulatory environment for private line services. To provide a basis for an appreciation of these problem areas, the study presented a brief historical background of private line services; indicated the major concepts of private line services; and, attempted to place these services in perspective with some quantitative data. The study also reviewed the current regulatory situation for private line services in various Canadian jurisdictions.

In the previous chapter the possible problem areas were snythesized around two polar viewpoints: those of the users of private line services and those of the suppliers of private line services. The purpose of this final chapter is to highlight and discuss some of the major points that have emerged during the study.

The Concept of Private Line Services

From a historical perspective, private line services had their origins in the point-to-point facilities which were dedicated to serve a subscriber's private communication requirements. It was natural that a distinction would develop between these types of services and the "public" services of the telecommunication carriers. First of all, the private line services generally bypassed the switching facilities and, secondly, the rates and conditions were usually established on a special contractual basis.

From the information gathered for this study and the discussions that have taken place, it appears that there is room to question the validity of maintaining such a distinction for many of the contemporary "private line services". First of all, there is an intimate relationship between the physical plant and administrative structures associated with the provision of both public and private line services. Furthermore, many of the private line services do not have the basic technical characteristics of the earlier services which were provided on facilities that were physically identifiable and distinct. In fact, most private line voice and private data circuits use local loops that are an integral part of the switched network and inter-city circuits that share cable or microwave toll facilities with the public telephone network. An additional factor is the hybrid nature of some private line offerings. Telpaks offered by some telephone companies have, for example, come to include exchange connected services.

There is a variety of concepts as to what private line services really are and the issues concerning the regulation of these services vary depending upon the concept that is considered most appropriate. The concept that private line services are primarily a family of services for which predetermined patterns are available, and which may consequently qualify for particular rates based either on economies or premiums, suggests that such services are simply an integral part of the whole spectrum of services offered by a telecommunication carrier. From this perspective, issues relating to special regulatory considerations become less imperative.

This viewpoint would appear to be particularly appropriate in the case of a large number of private line offerings which could be considered to be "off-the-shelf" services. These services, such as private line voice, private line teletype or data, Telpak, Telex or TWX are generally offered by the telecommunication carrier on the basis of standard rates and conditions of service. Therefore, there is essentially a tariff for the service, whether or not this is filed with a regulatory board or whether it is simply an internal working document for the carrier.

This concept of private line services is, of course, not universally applicable and it is necessary to highlight some of the distinguishing features of private line services that hinder any oversimplification of the regulatory situation. First of all, these services do not generally have access to the switched networks; secondly, the facilities used to provide the service are usually dedicated to the user for some continuous period of time; and thirdly, there is often a choice of supplier for these services.

It is worth while noting the concept which views private line services to be those telecommunication services which are provided to a customer by means of facilities that are exclusively dedicated, for any period of time, to serve his telecommunication requirements. This concept was very useful until developments in the industry eroded its viability. As noted in the study, private line services are now available on a switched network basis. Telex and TWX are good examples and switched broadband facilities are developing rapidly. Developments such as these obviously move these services outside the scope of this concept of private line services; however, the related problem of regulators is perhaps more than one of simple conceptualization. To regulate these services the legislative definitions must be adequate and some problems have apparently arisen in this regard where the definitions were framed in outdated technology. Another factor which weakened this concept was the development of multi-purpose offerings which embraced both regulated and non-regulated services in a single offering.

It is recognized that any simplified view of private line services which serves to minimize the existence of regulatory problems immediately merits some qualifications. These are called for when those private line services, generally classed as "special assemblies", come up for consideration. Services provided on a special assembly basis are usually custom designed and custom rated to meet the individual needs of a particular customer. The private switched networks for the Department of National Defence and General Motors are examples, as are the specially constructed microwave links serving some broadcasters' requirements for TV transmission.

It is apparent that there are difficulties for the telecommunication carriers with respect to filing tariffs for custom designed services. It is probable that the carriers can set forth the general criteria used for pricing such services and identify the manner in which they arrive at costs. However, this falls considerably short of filing tariffs for the tolls to be charged. Given an extrapolation of the traditional regulatory approach to these custom services, it is possible to visualize a catalogue of rates and conditions of service, each applicable to a single customer. The administrative problems, and the problems of assessing whether there are dissimilar circumstances surrounding two identical services being offered at different rates, are only a few which may assail the regulator of these types of services.

Other services which do not neatly fall into any simplified view of private line services are those which involve activities such as equipment leasing. Most telecommunications carriers lease radio equipment for private land mobile systems; private radio paging systems; or private intercommunication systems. In this area, the carriers compete directly with a wide range of equipment suppliers. Activities such as these, which involve the leasing of equipment that is not associated with the provision of service, move the carrier into a sector of the telecommunication industry that is highly competitive and which is somewhat unrelated to the basic function of a "telecommunications carrier".

With these observations concerning the concepts of private line services in mind, a brief discussion of the regulatory alternatives for private line services may serve to highlight some of the issues.

Discussion of the Regulatory Alternatives

In the previous chapter, it was hypothesized that both the economic and technical regulation of private line services could be visualized in terms of two dimensions: the scope of the private line services regulated and the degree of regulation of the services.

Although this may provide an orderly approach for analysing issues concerning the regulation of private line services, it may not necessarily be the best starting point. It was a common observation that the most desirable point of departure is the objectives of the regulation. A full appreciation of the objectives is essential to an evaluation of the alternatives.

Economic Regulation. Any attempt to discuss whether some, or all, private lines services should be specifically regulated immediately raises a host of basic issues. The degree of competition that is desired in this area of telecommunications is only one such issue.

There are, however, some observations that might be valuable. There are a number of carrier activities, generally classified as private line services, which fall at the outer limits of the telecommunications carrier function. Equipment leasing, which was discussed earlier, is one example. The leasing of computer processing capacity (without telecommunication facilities) is another. A more extreme example might be the leasing of spare office space. All these sources of income are essentially unrelated to the basic role of a telecommunication carrier and consequently may deserve some careful examination as to the degree of economic regulation that is necessary.

In most of these types of activities the carriers are competing directly with a wide range of other suppliers. A degree of economic regulation that involves the filing of lease rates for specific pieces of equipment might prove to have practical difficulties. If exclusions are judged advisable, the manner in which they are identified warrants careful consideration. Any definitions in legislation that are based on technology are apt to cause future difficulties. Exclusions based on clearly definable service categories or which derive from the statement of objectives would appear to avoid the most obvious future problems.

It is amply evident that the degree of economic regulation that should be considered for individual private line services is an issue for which few answers can be found in this study. There is, however, one generalization that would appear to be valid. In most jurisdictions, private line services of all types are at least subject to an environmental type of regulation. This observation would in fact apply to any activity that is undertaken by a carrier itself (as opposed to a subsidiary). These activities and services are regulated inasmuch as the carrier's regulatory body seeks to ensure that they do not impose any undue burden on the regulated services. Moreover, in most jurisdictions, there is some control exercised over the rate of return earned by the carrier. This degree of regulation exercises some economic constraints on the private line services.

Turning to the degree of economic regulation that might be considered for individual services, two observations can be made. First of all, if there is validity in the impression that there is a diminishing difference between a large number of private line services and public services, then it would follow that the degree of regulation for such services need not differ substantially from that which is applicable to all services generally. Secondly, there may nevertheless be particular services, such as those for which there are alternative suppliers, that might merit special consideration with respect to the degree of economic regulation.

Technical Regulation. The subject of technical regulation, although encountered during the course of the study, did not emerge as a particularly strong issue. Rather than technical regulation per se, i.e. a regulatory body charged with the responsibility for setting technical standards for various classes of private line services, it appears that users are more interested in issues relating to means of ensuring that telecommunication carriers will:

(a) introduce services with new or different technical characteristics as markets develop for these services;

(b) maintain the technical standards of service that are specified in the service offerings;

(c) design rates for service offerings that reflect any differing technical standards.

With respect to all these points, one is struck by the fact that they are closely related to costs and rates and that there are strong economic overtones to all of them. In fact, differentiation between economic and technical regulation may be oversimplifying the matter. For example, with reference to point (a) above, it is generally true that a carrier can introduce a private line service with any technical characteristics a customer desires, at least on a special assembly basis, provided the customer is willing to pay for it. Also, when the question is raised of introducing new private line services as a general offering, one can expect to find that the basic issues have their roots in economic considerations. The need to replace obsolescent plant to provide a new generation of private line services would have a significant impact on the economic aspects of the carriers' operations.

Consequently, while it is possible to distinguish conceptually between economic and technical regulation, it appears that basic issues preclude any narrow view of technical regulation. Consideration of technical parameters appears to merge quickly with the regulatory body's overall function of regulating the carrier. The key requirement from a user's point of view seems to be for an impartial body to which they have reasonably easy access and which would be able to assess issues relating to technical quality and costs. The desirability of a regulatory body charged with directing the introduction of new facilities and services must also be tempered by the realization that a Commission that had directed a telecommunication carrier to introduce a new service would be in an extremely difficult position if the carrier subsequently came forward with a request for rate increases to support its introduction.

There are also some obvious difficulties with any approach to technical regulation that involves the setting of standards of technical quality for various private line services. If such standards were developed within a rigid framework, rapidly developing communications technology could easily lead to the standards becoming too high for some users and too low for others. Furthermore, technical quality is multidimensional; therefore, changes in standards to improve one parameter might degrade another.

Impact on Users

When the several possible problem areas for the users of private line services are viewed in terms of regulatory alternatives, it appears that economic regulation would considerably lessen the basis for user complaints. An emphasis must, of course, be placed on the word "basis". It is possible that rate regulation of individual private line services, which would delve into elements of cost, return on investment, and value of service, might lead to increases in some rates

rather than a decrease. Such an eventuality would probably lead to further user complaints; however, there should be little ground for allegations of discrimination, unfair allocation of costs or unfair competitive practices if the rates had been scrutinized by the regulatory body.

It appears that economic regulation focused solely on an approval of rates for private line services would not completely eliminate all of the possible problem areas that could arise for users of these services. However, as noted earlier, any problems associated with the terms and conditions of service or the technological aspects of private line offerings are closely allied to economic considerations. If the scope of a regulatory body's surveillance over the economic activities of the telecommunication carrier were broad enough, or if they were framed in terms of objectives which would permit the regulator to take all relevant factors into consideration, then the basis for many of these types of problems might also disappear. One of the major factors in the regulation of private line services, from a user's point of view, would be the fact that there was an independent body to which he had recourse for matters relating to the provision of private line services, whether they be economic or technical.

Impact on Telecommunication Carriers

One of the carriers' primary concerns relates to the competitive nature of some private line services. They fear that the regulated carriers may be placed at a serious disadvantage vis à vis those whose private line services are unregulated or those suppliers of similar services who are under no economic regulation whatsoever. This concern is evidenced by the fact that the TCTS study group has conceptualized private line services as those which can be obtained from one or more supplier.

It is difficult to assess the real difficulties that a regulated carrier will encounter when offering regulated service in a competitive situation; however, certain points have been raised during the study that are worth discussing. First of all, the basic concern of a carrier about the competitive nature of private line service appears to be based on the assumption that it will have to compete with a rate structure that is both fixed and exposed. This assumption would not necessarily be valid if legislation enables the regulatory body to recognize and assess the competitive elements with respect to a particular service. Under these circumstances the carriers could possibly be freed, within the regulatory framework, to meet competition for a particular service if it so wished.

Another set of alternatives hinges on the minimization of any real competition with respect to the provision of private line services. An exploration of these alternatives is beyond the scope of this study; however, one important element should be noted. One aspect of the problem arises from the complex jurisdictional situation in Canada in which there can be two carriers offering private line services, one of which is regulated with respect to these services while the other is not. Continuing efforts to obtain a common viewpoint with respect to the regulation of private line services, to the extent that differing legislation will allow, is an important consideration. Another consideration, which is not evaluated here, is the federal regulation of all interprovincial private line services with a view to reducing the disparities among the approaches of different regulatory bodies.

Another point of interest relates to the degree of competition that actually exists in the "competitive situations". In general, the major competition for private line services is between the TCTS members and CN/CP Telecommunications. However, this competition relates primarily to services using intercity toll facilities. By virtue of their monopoly position in the switched telephone network, the telephone companies have an advantageous position for the provision of private line services requiring the plant associated with exchange services. CN/CP Telecommunications must lease local loops from the telephone companies to off-end traffic for most of their private line services. Therefore, for a majority of the private line services there is, at best, only competition between two major suppliers.

Given this degree of competition it still appears that there is very limited price competition in many of the "off-the-shelf" services such as private line voice and private line teletype. There are, in fact, indications of a "price leader" - "price follower" relationship between the two carriers. Price competition emerges most markedly in the "special assemblies". In this area, although the carriers appear to base their lease rates on incremental costs, there seems to be some recognition of what a competing carrier can offer or what the prospective user can provide for himself.

Companies which offer Restricted Common Carrier Mobile Radio Services (RCCMRS) constitute another group from which the telecommunication carriers face competition. The services provided by Restricted Carriers do not provide interconnection with the general land telephone system.[1] Therefore, they do not compete with the general land mobile system provided by a telephone company which is integrated with the switched network (this latter service is, of course, not a private line service). However, some telephone companies also operate RCCMRS systems. To the extent that they do, they could be in direct competition with an unregulated, entrepreneurial operation.

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1. The RCCMRS was established to provide two basic classes of service: (a) Remote Dispatch; and (b) Message Relay.

There is, however, some area for discussion as to the degree that the entrepreneurial systems are unregulated. While it is true that there is no specific rate regulation, the Department of Communications exercises technical regulation with respect to the equipment that is used for a RCCMRS and the companies' technical competence. Furthermore, DOC inquires into the financial competence of applicants for such systems, and limits the licences for such systems to one per urban area. Two licences are permitted in areas with populations over 500,000. Therefore, it appears that any major issues concerning competition between a telecommunication carrier operating a RCCMRS under rate regulation and a business venture operating a system without rate regulation would be restricted to the larger urban areas.

It might also be noted that the problems that might possibly arise from such a situation are not entirely confined to the regulated telecommunication common carrier. In the United States, businesses offering unregulated telecommunication services have appeared before Regulatory Commissions to claim protection against utility competition. There have been claims that it was the telephone companies' rates that were destroying competition because they were non-compensatory.[2]

The emergence of Telesat Canada as a telecommunication carrier to provide private line services adds, of course, another dimension to the Canadian scene. It is obvious that the domestic satellite system may offer major users a third alternative as far as long haul, inter-city facilities are concerned. Inasmuch as Telesat might be offering services that can compete directly with both TCTS and CN/CP Telecommunications and, since both these carriers will probably own part of the Corporation, the situation may present some special regulatory problems that will deserve particular attention.

Any accurate assessment of the impact of the regulation of private line services on the telecommunication carriers must, in the final analysis, depend upon the scope and degree of the regulation. The relative impact will also depend upon the carrier that is being regulated. From the figures obtained for this report, it appears that private line services represent a significant portion of the revenue for the railway carriers, while it is less than 5% of the toll operating revenue for the Trans-Canada Telephone System. Therefore, the impact of regulating these services will obviously be greater on the railway carriers who have, prior to the implementation of Bill C-11, only been regulated with respect to their telegraph services and public telephone services.

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2. Trends and Topics "Utility Competition with Unregulated Business", Public Utilities Fortnightly, September 25, 1969, pp. 53-5.

APPENDIX A

INFORMATION RECEIVED FROM PROVINCIAL REGULATORY BOARDS CONCERNING THE REGULATION OF PRIVATE LINE SERVICES

This Information Provided By:

Province of Newfoundland and Labrador
Board of Commissioners of Public Utilities

The Newfoundland Public Utilities Act does not contain any specific provisions relating to the provision of private line service. "Service" is defined in the Act as the use and accommodation afforded users and no public utility is permitted to charge any compensation for any service performed by it whether for the public or under contract until it has first submitted a schedule of rates, tolls, and charges to the Board and has obtained approval for them. Any firm, person or corporation which owns, operates, manages or controls equipment or facilities for the conveyance or transmission of messages or communication by telephone or telegraph for compensation is a public utility for the purposes of the Act.

The general approach adopted in exercising regulatory authority is to determine the gross operating revenue required to meet all operating expenses, including depreciation and taxes, and to yield a reasonable return on the rate base which for all practical purposes is equivalent to the depreciated book value of the fixed assets plus allowances for cash working capital and average monthly inventories of materials and supplies held for maintenance purposes.

Rates for different classes of service are established by the Board after consideration of value of service and the rates being charged for comparable services in other areas. In establishing general tariffs the costs of providing the different classes of services are not required. When applications are received for approval of rates for new services, it is required that a carrier submit estimates of the capital cost of providing the new service, and the annual expenses associated therewith, including rate of return and the rates being charged by other carriers for similar services in the Atlantic Region. If the Board is satisfied interim approval is granted. Interim approval terminates when the next Order is made fixing a Tariff for the carrier. The law and the regulations apply to all telecommunications services furnished within the jurisdiction of the Board. The Board, of course, has no jurisdiction over service extending beyond provincial boundaries, neither does the Board exercise jurisdiction over non-telecommunications services; for example, yellow page advertising in supplements to directories.

It might be noted that the Newfoundland Telephone Company applied and the Board granted approval of rates for closed circuit television and frequency modulated transmission during 1969.[1]

Public utilities in the province are required to obtain the approval of the Board for expenditures in excess of $25,000 for any new construction, improvements or betterments in, or extensions, or additions to its property used or useful in furnishing any service.

This Information Provided By:

Province of Prince Edward Island
Public Utilities Commission

Regulation of all electric power and telecommunications is provided for under the Electric Power and Telephone Act.[2] Authorization is provided throughout the Act under various sections for regulation of different types of service. Section 1(d) provides for the interpretation of a "public utility" under the Act and Section 5 provides for certain other authority. Section 16(1) and (2) provides for the fixing of rates for all types of services provided by such a utility. Sections 20 and 21, as amended, provide still further authority relative to the fixing, varying and altering of rates.

The general approach to the fixing of rates is provided for in the various sections of the Electric Power and Telephone Act.[3] In considering any rate revision cases the Commission gives close attention to the generally accepted public utility practices, as determined by various rate cases throughout Canada and the United States.

Any valid complaint as to inadequate service is immediately brought to the attention of the utility concerned by the customer. If this brings no satisfaction, the matter is then referred to the Commission which has, to date, invariably resulted in a satisfactory solution being reached.

Specific regulations and requirements applicable to any one type of service do not exist under the Act. The levels of quality for private line services, such as program transmission, have been satisfactorily arrived at between the utility and the customer. All rates and charges are fixed by the Public Utilities Commission and may be determined in any one of several ways. However, in most cases,

1 For further details see, Province of Newfoundland, Board of Commissioners of Public Utilities, Twentieth Annual Report, 1969. pp 36-9.

2 Province of Prince Edward Island. The Electric Power and Telephone Act, R.S.P.E.I., 1951, c. 49.

3 Ibid., Sections 22 to 29 inclusive.

the utility makes application with a proposed schedule of rates and charges designed to yield a given level of return on a prudent original investment, less accrued depreciation. A practice adhered to by the Commission with regard to various types of services provided by a given utility is that no utility is allowed to provide services to one group or class of customer which would have to be subsidized by other customers of the utility. Regulation of the utility applies to all services offered by the utility, other than holdings of the company which do not concern the utility, and these must not represent any cost to the utility as such.

The utilities are not permitted to construct any line, plant or system, nor at a cost exceeding one thousand dollars make any extensions or improvements, without the approval of the Commission.[4] It is also interesting to note that the legislation permits the Commission to fix and determine a separate earnings base for each type of service furnished, or supplied to the public.[5] However, as mentioned above, the Commission has chosen to treat the utility as a whole and provide a rate which gives a reasonable return on the rate base of the utility as a whole.

This Information Provided By:

Province of Nova Scotia
Board of Commissioners of Public Utilities

In the Public Utilities Act the public utility is declared to include any person who owns, operates, manages or controls any plant or equipment for the conveyance of telephone messages. Service is further defined as including the conveyance or transmission for compensation by a public utility of telephone messages. Furthermore, a "telephone line" is defined as including all property used, operated, controlled or owned by a public utility to facilitate the business of affording telephonic communication for hire.[6]

As a consequence of these and other provisions in the Public Utilities Act, private line voice service is considered to be a public utility service and subject to regulation. It follows that private line voice service is dealt with by the Board as one of the regular telephone services to be provided by the Telephone Company and the rates for this service reflect the same general approach as is followed in determining exchange service and long distance rates.

Rates for regulated services provided by Maritime Telegraph and Telephone Company are designed on a province-wide basis under a rate schedule that reflects a considerable emphasis on value of service. Private line voice service is not considered

4 Ibid., Section 6(1).

5 Ibid., Section 24.

6 Province of Nova Scotia. The Public Utilities Act. R.S.N.S. 1967., c. 258, Section 1.

to be a special or unusual service that would justify rates related to special capital or operating expense. The rates for private line voice service are determined by the Board in the same manner as rates for other regulated services and cannot be changed or verified, except upon application to the Board.[7]

In the Province of Nova Scotia services such as television and radio broadcast, T.W.X., teletype, private mobile telephone, wired music facilities, leased services such as alarm circuits, and leased facilities to other carriers, are not subject to regulation by the Board of Commissioners of Public Utilities. These, together with all out-of-province services including message toll, provide Maritime Telegraph and Telephone Company Limited's non-regulated revenue. Rates for these services are not submitted to the Board for approval or for information, or at all, and there is no requirement that the investment and costs associated with these non-regulated private line services be identified. The Board, however, upon applications made to it for approval of General Tariff changes in the rates for regulated services requires evidence from Maritime Telegraph and Telephone Company Limited and statements of its officials to give assurance to the Board that in the view of management the revenue from regulated services does not subsidize the non-regulated services and that the Company's participation in non-regulated services is beneficial to the quality and price of regulated services. The Board does not require separation of costs but is extremely interested in the outcome of the direction contained in the September 25th, 1969 decision of the Canadian Transport Commission, Railway Transport Committee in the Bell Canada application.

The Public Utilities Act, Section 34, prohibits a public utility from proceeding with any new construction, improvements or betterments in or extensions to its property, which requires the expenditure of $5,000 without first acquiring the approval of the Board. This Section has proved to be most useful in enabling the Board to consider in advance the purposes and propriety of capital expenditure, especially major capital expenditures. It has also been most useful in enabling the Board to require Maritime Telegraph and Telephone Company Limited to lay before the Board, in addition to estimates of costs, estimates of revenue when capital expenditures are being approved for the installation of facilities to provide both regulated and non-regulated services.

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7 Ibid., Sections 60-67 inclusive. These sections indicate the nature and extent of the regulation of telephone rates in Nova Scotia.

This Information Provided By:

Province of New Brunswick
Board of Commissioners of Public Utilities

The only provincial statute authorizing the Board to regulate the private line services is the Public Utilities Act. No regulations have ever been made by the Board, although policies have been declared from time to time over the years, and it has attempted to follow court procedures with the usual amount of latitude traditionally allowed by administrative tribunals.

The question of private line rates arose in 1962 when a complaint was lodged by the Board against New Brunswick Telephone in respect to certain practices of the utility in the field of private mobile radio service. The Board decided at that time that private mobile radio service was not tied in with the public telephone service and, therefore, the Board had no regulatory power over this particular service.[8] In addition, this service was being provided on a competitive basis with others providing the same type of service.

In 1963 an application was made by New Brunswick Telephone for the deletion of private line telephone service from the General Tariff. The reasons brought forward by the Utility at that time were that it was not a service that was accessible for use by the general public, in that, it was supplied and was only available for use between predetermined specified terminals and was not connected for intercommunication with the company's general local or long distance network. On May 17, 1963, an order was issued by the Board approving this deletion and since that time, the rates for private line telephone service have not been filed with the Board. They are, however, available for examination by the Board at all times, inasmuch as New Brunswick Telephone is always ready and willing to supply the Board with any information which is available.

The question of separation of costs to identify service and cost connected with private and other non-regulated services has come up occasionally, particularly with reference to the private line radio service and inter-provincial tolls. The Board has considered the separation of costs for these non-regulated services from time to time but has realized, after consultation with its auditors, that to place the burden for separating cost for non-regulated services with respect to inter-provincial tolls would be a tremendous and costly one. However, it should be noted that in the rate decision, which the Board handed down on December 3, 1969, it stated that New Brunswick Telephone should make a study to show the extent to which revenues derived from intra-provincial non-regulated revenues exceed the incremental costs of supplying such service.[9]

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8 For a report of the decision see: Province of New Brunswick, Report of the Board of Commissioners of Public Utilities, December 31, 1962, pp. 86-94.

9 Province of New Brunswick. Decision, Board of Commissioners of Public Utilities. December 3, 1969.

The Board does not exercise any particular regulatory control over capital expenditures which would have the effect of giving a degree of regulatory control over private line services.

This Information Provided By:

Province of Ontario
Ontario Telephone Service Commission

The Ontario Telephone Service Commission functions by reason of the Telephone Act.[10] The concern of the Act is regulation of public telephone service, its enfranchisement and interconnection. This Act makes no reference whatsoever to private line service as it is defined for this study.

Any regulatory power over private line services is therefore by implication, it being realized that, in practice, the public telephone system may conceivably experience customer demand for private line service. On this basis the Act might, by virtue of the definition of rate, be construed as providing for regulation of a service leased to a customer. Rate is defined as "any rental or charge for supplying telephone exchange service and all services associated therewith".[11] If this were conceded, then certain sections of the Act could apply to that private line service in the same manner as they do to public service.[12] However, it should be noted that the private line services could be regulated only if associated with the telephone exchange service.

The Ontario Telephone Service Commission to date has not actively sought to regulate the private wire leases afforded their customers by telephone systems under its jurisdiction. It has relied upon the norm of the industry to function as self regulator. Under this approach the telecommunications carrier and its private customer would negotiate directly and, if agreement is reached, the Commission would not necessarily intervene. If the carrier should appeal to the Commission for technical advice or advice in setting a rate, there is no doubt that advice would be given. If the customer should appeal, complaining of hardship, there is not doubt that the Commission would intercede between carrier and customer in an effort to establish agreement. It would be expected, in either situation, that the Commission would be guided by what it considered to be the current industry norm as to service and charge, together with any local factors bearing upon the case. It is furthermore certain that, should it become apparent to the Commission that a carrier's public service was suffering for some reason arising out of its private line activities, action would ensue to ameliorate such a condition.

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10 The Province of Ontario. The Telephone Act R.S.O., 1960, c. 394, as amended.

11 Ibid., Section 1(g).

12 Ibid., Sections 1(j), 6, 14, 15, 26, 100, and 105.

The private line cases dealt with would be specific hence no routine filing or checking is involved. However, by general Order, the Commission has regulated several services, which are of the nature of private line leases, and which have occurred with some frequency. These are as follows:

(i) Circuits for teletype use.

(ii) Circuits for program transmission.

(iii) Telephone co-ordinating circuits; for example: those for use with radio operation.

(iv) Inter-exchange and foreign exchange circuit mileage charges.

There are various regulatory factors which apply under sections of the Telephone Act which are applied to the carrier's operations as a whole, hence resulting in a degree of regulatory control over the private line offerings. These factors relate to borrowing; interconnection of systems; agreements affecting costs of public service, etc. [13]

This Information Provided By:

Province of Quebec
Public Service Board

By virtue of its constituting law, the Public Service Board has full jurisdiction to regulate the private cable services of the communications common carriers.[14] Whether it is a cable service for computer use provided by a telephone company or a cable service for audio-visual transmission, the Board has jurisdiction to regulate all these services even for the part of the operation which might require the use of radio waves to establish a link with another type of transmission terminal.

The present legislation allows the Board to exercise the necessary authority for purposes such as closed circuit production, local or regional consumption, even if there is use of antennas. However, the law will probably have to be amended to make it more precise and explicit on the matter of the Board's jurisdiction over radio operation.

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13 Ibid., See Sections 12, 13, 30, 33, 44, 48, 51, 61 63, 96, 99, 102, 109 and 115.

14 Province of Quebec. Public Service Board Act. R.S.Q. (1964), c. 229. Note specifically Sections 2(3) (a), 3, 15, 17, 18, 19, 20, 23, 24, 26, 27, 28, 30, 32, 33. Note also Standard Time Act R.S.Q. (1964) c.4. Under this Act, Section 4: the Board also has the power to regulate the schedules of the public services under its control.

The general way in which the Board exercises its authority at present is as follows:

(a) It approves plans for underground ducts submitted by the City of Montreal in accordance with its charter;

(b) It approves tariffs for the use of computer centres offered to the public by telephone companies which come under the Board's jurisdiction;

(c) It will approve, in the near future, tariffs, contract forms, installations and regulations concerning CATV services;

(d) It has already started to investigate and evaluate, all CATV services and computer centres in the Province of Quebec.

No specific regulations have yet been issued by the Board concerning private cable services. For the time being, each case must be judged individually, but a general Order on the subject will be issued by the Board within the next few months. Rates are submitted to the Board for approval. Common carriers are compelled to give details regarding the investments and the relative costs of private cable services. This obligation will be extended to all common carriers as soon as the general regulation is approved by the Board.

All the factors related to regulation have not been defined since the general Order on that subject has not yet been adopted.

This Information Provided By:

Province of Manitoba
Public Utilities Board

In Manitoba, the Public Utilities Board Act defines, in part, a public utility to be any system or equipment for the transmission of telegraph or telephone messages.[15] In the Act, the Board is empowered to exercise a general supervision of the utilities.[16] However, revisions to the Manitoba Telephone Act in 1955 provided that the Board had no direct jurisdiction to regulate the economy of the Manitoba Telephone System with respect to such items as the issue of capital, or construction expenditures.[17]

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15 Province of Manitoba. The Public Utilities Board Act S.M. 1959(2nd), c.51, Section 2(h).

16 Ibid., Section 74(1).

17 Trans-Canada Telephone System. History of Regulation and Current Regulatory Setting. Telecommission Study 1(b), March 1970.

The Board's regulatory control over the Telephone System centres on the rates and matters found in Section 77 of the Board's Act. It also has the right to technical regulation relating primarily to methods, standards and safety.

The Manitoba Telephone System does not, however, submit private line rates to the Board for approval. The Board appears to have primarily dealt with rates as they affect the general public.

This Information Provided By:

Province of Saskatchewan
Saskatchewan Telecommunications

The Saskatchewan Telecommunications Act constitutes the charter, powers and responsibilities of Sask Tel. Section 8 of the Act as amended by S.S. 1969, c. 52, sets out the powers of the corporation with respect to services, rates and special agreements. Sask Tel must publish its rates, etc., governing its services, provided that where the published rates etc., do not accommodate a particular service that is required, a special agreement may be negotiated.[18]

In practice a few of the private line services may be so well established that the rates, terms and conditions applicable thereto can be set out as a firm offering in the published schedule. However, in other private line cases the specifications vary substantially and virtually call for "custom jobs". In these cases it is necessary to determine the costs applicable to each for the purpose of negotiating special agreement rates in the competitive market.

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18 Province of Saskatchewan. The Saskatchewan Telecommunication Act., S.S. 1969, c. 52, Section 8(2), 8(3). Section 8(3) is of particular interest:

(3) Notwithstanding subsection (2), where in the opinion of the corporation the schedule of charges, rates, terms and conditions referred to in that subsection does not adequately accommodate the provision of a particular telecommunication service requested by a person, the corporation may, by itself or jointly with the owners or operators of other telecommunication systems, enter into a special agreement with such person to provide the service in accordance with charges, rates, terms or conditions at variance with or in addition to those set out or described in the schedule and the agreement shall have precedence over the schedule to the extent necessary to give effect to such agreement.

The total capital borrowing limit of Sask Tel is set out in the Act (presently $175 million). Any increase in this requires the approval of the legislature. Furthermore, all borrowings by or for Sask Tel require the approval of the Lieutenant Governor in Council. Specifically, each capital project exceeding $25,000 in cost, must, as a matter of policy, be submitted to the directors of Sask Tel for approval. The acquisition of any real property for a price exceeding $10,000 requires the approval of the Lieutenant Governor in Council. Tariff adjustments of significant consequence are, as a matter of policy, referred to the directors and responsible minister and often to Cabinet for approval. The annual report and financial statements of Sask Tel must be laid before the Legislative Assembly each year and these are reviewed by a Select Standing Committee of the Legislative Assembly.

These factors exert some influence over Sask Tel's tariff and service offerings including private line services.

This Information Provided By:

Province of Alberta
Public Utilities Board

The question of the Board's jurisdiction with respect to private line services is one that would have to be dealt with in any application which might come before the Board; or, if the Legislature deemed it necessary, there might be some expansion of the words "telegraph or telephone messages" as they appear in the definition of a public utility, to encompass private line services.[19]

This Information Provided By:

Province of British Columbia
Public Utilities Commission

The Public Utilities Act of British Columbia defines a public utility as a person who owns or operates in the Province equipment or facilities for "the conveyance or transmission of messages or communications by telephone or telegraph, where such service is offered to the public or any corporation for compensation."[20]

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19 Province of Alberta. The Alberta Public Utilities Board Act. R.S.A. (1960), c.85, Section 2(j)(i).

20 Province of British Columbia. The Public Utilities Act. R.S.B.C. (1960), c. 323, Section 2.

Since B.C. Telephone is subject to federal regulation, the only private line services which the Commission regulates are those provided by Okanagan Telephone Company, and the general approach adopted by the Commission is the same as that for other services offered by the same company. Rates are specified by tariff and are the same for all subscribers who request service under substantially the same terms and conditions.

There is no attempt to segregate the investment which applied to private line service as distinct from the other services offered, but the telephone utility as a whole is regulated on the basis of a fair rate of return on original cost rate base. The Telephone Company submits capital budgets and applies for Certificates of Public Convenience and Necessity for major additions if such major additions substantially alter the service area of the Company or if, as a result of review of the capital budget, the Commission deems such application (and consequent advertisement) to be required in the public interest. The Telephone Company also submits for prior approval new service offerings.

APPENDIX B

Information Relative to the Significance of
Private Line Service Provided by:

TRANS CANADA TELEPHONE SYSTEM

CANADIAN NATIONAL/CANADIAN PACIFIC
TELECOMMUNICATIONS

MESSAGE TOLL AND PRIVATE LINE CIRCUITS (1)

TRANS-CANADA TELEPHONE SYSTEM MAJOR ROUTES

See Note Below

INTER-PROVINCIAL

	B.C. TO ALTA	% OF TOTAL	ALTA TO SASK	% OF TOTAL	SASK TO MAN	% OF TOTAL	MAN TO ONT	% OF TOTAL	ONT TO QUE	% OF TOTAL	QUE TO N.B.	% OF TOTAL	N.B. TO N.S.	% OF TOTAL
1967														
Message Toll & TWX	355	93	565	95	530	94	499	92	964	77	372	93	322	80
(2)P/L Voice & TTY	4	1	3	1	3	1	3	1	150	12	4	1	6	2
Program	24	6	26	4	28	5	30	5	34	3	20	5	25	6
Defence	-	-	-	-	-	-	14	2	100	8	3	1	47	12
Total Voice Equivalent	383	100	594	100	561	100	546	100	1248	100	399	100	400	100
Total 1-way Video	4		5		4		4		4		4		3	
1968														
Message Toll & TWX	433	92	686	94	631	94	630	90	1238	79	422	87	372	82
(2)P/L Voice & TTY	4	1	4	1	4	1	5	1	167	11	6	1	8	2
Program	24	5	26	4	28	4	30	4	34	2	20	4	25	5
Defence	9	2	10	1	10	1	35	5	121	8	34	8	49	11
Total Voice Equivalent	470	100	726	100	673	100	700	100	1560	100	482	100	454	100
Total 1-way Video	4		5		4		4		4		4		3	
1969														
Message Toll & TWX	517	92	797	94	770	94	791	90	1484	71	486	80	441	84
(2)P/L Voice & TTY	5	1	6	1	7	1	8	1	179	9	5	1	8	2
Program	24	4	26	3	28	3	36	4	34	2	20	3	24	5
Defence	18	3	21	2	17	2	48	5	384	18	98	16	49	9
Total Voice Equivalent	564	100	848	100	822	100	883	100	2081	100	609	100	522	100
Total 1-way Video	4		5		4		4		4		4		3	

(1) Does not include circuits leased to other carriers
(2) These figures represent the voice equivalent for teletype circuits.

NOTE: Records for Private Line Voice and Teletype exclusive of Foreign Exchange, Tie Trunks, and Off-Premise Extensions were available for 1969 only. Using these current data as a basis, appropriate statistics were developed for 1967 and 1968.

MESSAGE TOLL AND PRIVATE LINE CIRCUITS (1)

TRANS-CANADA TELEPHONE SYSTEM MAJOR ROUTES

See Note Below

CANADA - U.S.A.

	B.C. TO USA	% OF TOTAL	ALTA TO USA	% OF TOTAL	SASK TO USA	% OF TOTAL	MAN TO USA	% OF TOTAL	ONT TO USA	% OF TOTAL	QUE TO USA	% OF TOTAL	N.B. TO USA	% OF TOTAL
1967														
Message Toll & TWX	258	93	53	48	-	-	166	93	987	86	1083	92	102	39
(2)P/L Voice & TTY	9	3	1	1	-	-	3	2	144	11	73	5	5	2
Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Defence	11	4	57	51	-	-	9	5	40	3	42	3	157	59
Total Voice Equivalent	278	100	111	100	-	-	178	100	1171	100	1198	100	264	100
Total 1-way Video	-		-		-		-		4		-		-	
1968														
Message Toll & TWX	322	57	71	48	-	-	245	79	1190	77	1157	83	100	29
(2)P/L Voice & TTY	9	2	1	1	-	-	3	2	160	9	79	4	5	2
Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Defence	236	41	75	51	-	-	59	19	214	14	184	13	238	69
Total Voice Equivalent	567	100	147	100	-	-	307	100	1564	100	1420	100	343	100
Total 1-way Video	-		-		-		-		4		-		-	
1969														
Message Toll & TWX	357	62	107	34	-	-	263	79	1562	80	1187	75	111	47
(2)P/L Voice & TTY	13	2	2	1	-	-	8	2	178	8	87	3	6	3
Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Defence	206	36	203	65	86	100	60	19	222	12	348	22	120	50
Total Voice Equivalent	576	100	312	100	86	100	331	100	1962	100	1622	100	237	100
Total 1-way Video	-			-	-		-		4		-		-	

(1) Does not include circuits leased to other carriers
(2) These figures represent the voice equivalent for teletype circuits.

NOTE: Records for Private Line Voice and Teletype exclusive of Foreign Exchange, Tie Trunks, and Off-Premise Extensions were available for 1969 only. Using these current data as a basis, appropriate statistics were developed for 1967 and 1968.

CIRCUIT MILES - TRANS-CANADA TELEPHONE SYSTEM

See Note Below

	1967		1968		1969	
	Miles	% of Total	Miles	% of Total	Miles	% of Total
Message Toll (incl. TWX)	4,730,000	90%	5,560,000	86%	7,020,000	86%
Private Line	506,000	10%	907,000	14%	1,125,000	14%
Totals	5,236,000		6,467,000		8,145,000	

Growth in:	1967 - 1968	1968 - 1969
Message Toll	17%	26%
Private Line	79%	24%
Totals	24%	26%

ORIGINATED REVENUES - TRANS-CANADA TELEPHONE SYSTEM

See Note Below

Year	Private Services	Total Operating Revenue - TCTS	% Private Services
1967	$ 45,118,000	$ 1,046,832,000	4.30%
1968	$ 51,797,000	$ 1,138,394,000	4.55%
1969	$ 58,341,000	$ 1,268,277,000	4.60%
Growth 1967 - 1968	15%	9%	
Growth 1968 - 1969	13%	11%	

NOTE: Telephone records do not distinguish between exchange-connected circuits (Foreign Exchange and Tie Trunks) and non-exchange-connected voice-grade private lines. The former were extracted by an estimating process based on current available data.

PRIVATE LINE STATISTICS

CANADIAN NATIONAL/CANADIAN PACIFIC TELECOMMUNICATIONS

The position of CN/CP in respect of revenue derived from non-regulated services in relation to that derived from regulated services clearly points up the importance to our operations of the service furnished by us within the present non-regulated environment. The following illustrates this:

JOINT CN/CP REVENUES FROM NON-REGULATED SERVICES YEAR 1969

Private wire, Telex, Radio and Television program services	$ 67,600,000
Broadband Exchange Service	$ 1,000,000
TOTAL:	$ 68,600,000

On the basis of these figures CN derives 75.6% and CP 81.7% of their total revenues from present non-regulated services. It must be pointed out that the extension of regulation to services not now regulated will affect in excess of 75% of CN/CP's business while it is unlikely to have an impact on more than the 5% of the Telephone Companies total revenues derived by them from this non-regulated source.

Our forecast of revenue growth of the services bulked under the general heading of Private Line Services over the next five years, with the exception of Broadband Exchange Service, where the present estimated high growth rate may be expected to decline percentagewise as the network expands in subscribers, is as follows:

Telex 14%-16% per annum

Private Wire Service 5%-6% per annum

Broadband Exchange Service 40%-50% per annum (for next two years when the growth rate is expected to decline significantly).

At the same time, however, as we forecast this growth rate in the present non-regulated services, we must also forecast a decrease in usage of the regulated public message service by a percentage rate of 3%-5% per annum.

Regulation of monopoly public services needs to impose adequate constraints to insure that the public interest is protected as well as to maintain the viability of this sector of the enterprise. Competitive services should be treated differently. In the latter case, regulation must be sufficiently broad to promote effective and fair competition. On the other hand, adequate regulatory power must be available to cover the entire spectrum of services so as to prevent the economic strength derived from protected markets in the monopoly field from being used by carriers to engage in unfair or destructive practices vis-a-vis other carriers in the competitive field.

Separation of costs in respect of each service offering would, in our view, be a necessary corollary to regulation of such individual service offering. Moreover, from a Telecommission or regulatory viewpoint, it could well be desirable to separate costs associated with monopolistic and competitive services to assure against cross-subsidization.

A very strong marketing effort is directed to those services now not regulated. It is supported by a strong well-directed sales organization. This is a joint CN/CP effort. The CN, however, are also directing substantial marketing and sales effort to the development of public telephone services furnished by them and which, of course, are now regulated. Insofar as the regulated public message service is concerned, experience over a number of years has shown that no amount of marketing and sales development work will have any appreciable effect on the volume, neither will advertising, irrespective of media used, bring about any significant change in the progressive decline in use of this medium of communications. Hence, the marketing and sales effort expended on the sales development of the public message (telegram) is minimal. It does, however, form part of the function of our joint CN/CP sales organization.

APPENDIX C

Submissions of Relevance to this Study

Canadian Association of Broadcasters
(This Submission initially prepared for Telecommission Study 1(d))

Canadian Electrical Association

Canadian Cable Television Association

Canadian Manufacturers' Association

Telesat Canada

Note: Requests for details of the information contained in the above mentioned submissions should be directed to the respective organizations.