(h)

Planning Planning

A Report to the Special Planning Advisor to the

Deputy Minister of Communications

by

Tim Creery

October 6, 1982

Planning Planning

A Report to the Special Planning Advisor to the

Deputy Minister of Communications

by

Tim Creery

October 6, 1982

INTRODUCTION

This report is of the "quick and dirty" variety. The objective was to get a line on the trends and issues in, and affecting, the Department of Communications which would be important to the planning advisory function being established in the Deputy Minister's office. The report was to help the Special Planning Adviser set up a work plan.

Three months were available for research and writing. The extent of the research can be seen on a declining scale, according to the areas intended for coverage, as follows: (1) the operation of the DOC in relation to the rest of government; (2) the DOC in relation to industry; (3) federal-provincial relations; (4) international relations.

I have tried to follow the idea of Professor James Taylor, the Special Planning Advisor, for an "open systems" approach to planning (here called "mediative planning" to distinguish it from the actual planning of physical open systems). I am also indebted to him for suggested communications concepts and references, and to his Associate Planning Advisor, Don MacLean, for facilitating and helping shape my own work plan. But the results of my endeavors are, of course, my responsibility.

Everyone I approached for interviews inside and outside government was helpful, frank, and generous with his or her time. As the interviews were conducted on a no-names-no-packdrill basis, I gained an understanding of the fact that mediative planning, no matter how conciliatory it sought to be, could not leave all toes equally untrodden.

Tim Creery,
Montréal, 28 September 1982

CONTENTS

Note: Abbreviated references are given in brackets in the text, according to either the name of the author or the first word or words of the title in the case of "anonymous" documents. The references are listed in full by alphabetical order after the last chapter.

I. PLANNING IN -- AND OF -- THE DEPARTMENT OF COMMUNICATIONS

Introduction: Technology and Information Power

At its inception, the Department of Communications was above all a planning department, planning itself. The DOC was formed in 1968 to bring together communications responsibilities lodged in various departments and agencies. But this was no mere reorganizational shuffle to make things tidy. It was a response to a new era of communication techniques. Government had viewed communications as discrete services, utilitarian or cultural, that were properly assigned to the responsibility of their users, providers and, where needed, regulators. There were telephone companies and their regulators, broadcasters and their regulators; there was the Post Office; there were publishers of all sorts. Government could deal with communications discretely when and where the need arose.

Now, however, in an era of fast technological innovation that had found its interpreters in the likes of Weiner, Deutsch, Ellul, Innis, and McLuhan, communication and its techniques were seen as a force in themselves. Communication was interpreted as a people-channelling, society-shaping phenomenon. The challenge to people and society was to channel or be channelled, to shape or be shaped.

The late sixties provided the context for a particularly vigorous governmental response to the challenge. The events of the Centennial Year, 1967, gave the country a sense of cohesion at home, and self-confidence in the international setting, after a querulous political period characterized by the strains of Canada's French-English dualism and

geographic regionalism. A period of better expectations seemed to lie ahead after a political changing-of-the-guard and the strong mandating of the Trudeau ministry in the 1968 election. The country, or at least Ottawa, was soon alive with the hum of planners. They would draw up the charts. The political leaders would show the way. The question of the hour was, "What kind of Canada do we want in the year 2000?" (French, p.43).

As a new department, starting fresh with a futuristic challenge, the DOC was well placed to get into the swing of things. Its Minister, Eric Kierans, laid down the approach (Instant, p.233):

> If our policies are to fulfil the promise of the technology, the promise of a better and more equitable distribution of information power, public policies must look beyond artificial boundaries, vested interests, and specialized knowledge. If our policies are to succeed, if they are to correspond to the needs of the people of Canada, we must have the courage to accept new facts, and to bring these facts together in a coherent and flexible policy.

The department had brought together four main areas of government activity: management of the electromagnetic spectrum, the development of satellite communications, research and development in communications, and the government's own telecommunications activities. The binding element in the planning exercise was to be the combination of "technology" and "information power". The goal was the coherent and flexible policy to correspond to the needs of the people.

Genesis: Telecommission World

Later developments in the planning of the DOC will become more understandable if we note at the outset that the terms of reference given the initial planning exercise were not as broad as the mandate which many in government

intended the department to have. In particular, broadcasting was excluded; and the department was seen more as an influence than as a player in the field of cultural policy and programs.

What the planners envisaged was a department of telematics guided by the principle of the right to communicate. (The term "telematics" is used here loosely, and will be throughout this report, to cover the information systems that can be obtained by combining transmission and computer technologies. Thus it includes areas that are described in other documents under such headings as "computer/communications", "communications/information", and "micro-electronics and information technologies". It is inclusive of "informatics", or computer processing of information. Vocabulary is a problem in the changing world of the new communications. Consider videotex, videotext, teletex, teletext, and online services. The semantic laws governing this report are those laid down by the author as the need arises.)

The planning exercise of 1969-1972, then, created the rationale for a department of telematics. The strength and persistence of this vision may be illustrated by the fact that the Strategic Plan prepared by the department's Planning Secretariat for 1981-1982, dated 28 March 1980, stated (Strategic 81-82, p.2):

> Each strategic objective... is related, in turn, to the Department's overriding concern -- the impact of communications-information technology on Canada's economy and society.

Except for reversing the priorities of the initial planning exercise, which put "society" ahead of "economy", this statement would seem to give us a clear run with an overall vision of the department from 1972 to 1980. Things were actually not that simple, and have become more complex since 1980; but let us go back to the beginning and the powerful "spin" put on the Department of Communications by its pioneers.

Students of government in recent years have been stressing the importance of governmental inquiries as "instruments of policy", as policy "outputs", rather than as simple "inputs" to policy-making. To some extent this is hairsplitting, since inquiries have long been seen as policy instruments: to the cynical, instruments of delay. But the more one moves in toward government and power from the model of the royal commission, established as an independent agency of inquiry and advice at arm's length from government, the more the inquiry is a policy instrument, despite all the customary disclaimers to the effect that its report is merely a discussion of issues, problems, and possible lines of policy. The early years of the Trudeau ministry were characterized by the type of inquiry, usually called a "task force", which remains under ministerial direction. Little resort was made to royal commissions, with their detachment, wide-ranging public hearings, voluminous research studies, often interminable duration, and tendency -- from a government point of view -- toward idiosyncratic conclusions and recommendations. The type of inquiry set up by the Department of Communications had most of the advantages of a royal commission but could be more closely tracked -- and kept on track -- by the department in keeping with its purpose. The purpose was to provide fodder for a governmental White Paper on communications policy that would be submitted to Parliament.

The inquiry vehicle was the Telecommission. Its chairman was Allan Gotlieb, Deputy Minister of Communications. Significantly, the membership of the committee included, apart from DOC representatives, the chairman of the Canadian Radio-Television Commission (as it was then called), Pierre Juneau, and a representative from the centre of government, Paul Tellier, assistant secretary to the cabinet in the Privy Council Office. While broadcasting, which had just been put under an amended regime in the Broadcasting Act of 1968, was excluded from consideration by the Telecommission, the overlap of DOC concerns with those of the CRTC were obvious. The import of the new communications for the whole of government, not just the DOC, was evident reason for including a representative from the PCO. The Telecommission was announced in 1969 as a comprehensive study of the present state and future prospects of telecommunications in Canada.

The general scope of the DOC was set out in an Act respecting the Department of Communications. Except for any powers, duties and functions specifically assigned elsewhere, the Minister was to:

(a) coordinate, promote and recommend national policies and programs with respect to communication services for Canada, including the Canada Post Office;

(b) promote the establishment, development and efficiency of communication systems and facilities for Canada;

(c) assist Canadian communication systems and facilities to adjust to changing domestic and international conditions;

(d) plan and coordinate telecommunication services for departments, branches and agencies of the Government of Canada;

(e) compile and keep up to date detailed information in respect of communication systems and facilities and of trends and developments in Canada and abroad relative to communication matters; and

(f) take such action as may be necessary to secure, by international regulation or otherwise, the rights of Canada in communication matters.

The Telecommission obtained more than 40 studies from its own project team, outside consultants, and interested parties. Seminars and conferences were also conducted and reported upon. The general report of the Telecommission's directing committee, Instant World, appeared in 1971. Meanwhile, its work had indicated the need for additional, more elaborate studies, in two areas: computer/communications and privacy in relation to telematics. A task force under H.J. von Baeyer, produced a report, Branching Out, in the first area in 1972. A task force of the Communications and Justice departments, directed by R.J. Gwyn and E.R. Olson, produced a report, Privacy and Computers, in the second area the same year. Taken together, these three volumes were the Telecommission world and they were to be exceptionally influential both in Canada and abroad as a model excercise for governments in coming to grips with telematics and public policy. This was especially so of Instant World.

Behind the selection of material for the report and its writing was the executive director of the Telecommission, Henry Hindley, a literary stylist with a career behind him in both administration and communication who was to remain a policy adviser to the department. The philosophy of Jacques Ellul, author of The Technological Society, who warned that society had let technique become its master, was strongly in evidence in the report. Instant World packed "A Message about the Medium", to borrow the title of its first chapter.

The premise of the report was that "new and emerging techniques will offer access to information on a scale hitherto unimaginable, together with opportunities for a much wider participation in community affairs and the democratic process". The report postulated a right: "The rights to hear and be heard, to inform and be informed, together may be regarded as the essential components of 'a right to communicate'". Therefore, "The people of Canada -- as a body and as individuals -- are entitled to demand access to efficient telecommunications services on a non-discriminatory basis at a reasonable price".

The report saw government as having a role in defence and emergency communications services, in regulating monopolies, and in assuring that "access to services and innovation in response to public needs are not unreasonably retarded by the weight of investment in existing facilities". The last point was made, specifically, in relation to "the possibility of an eventual network affording universal access to the means of transmitting and receiving information in virtually any conceivable form". The government role also extended naturally to management of a public resource, the electromagnetic spectrum; to setting standards of performance and compatibility of equipment; to influencing which means of transmission should be used to best provide service; to assuring privacy of communication on the one hand, and the right of access to information on the other. The report also discussed the government communications role in relation to rate-setting, taxation, tariff-setting, subsidies, and licensing.

The report said:

> One predominant theme emerges from the telecommission studies. The technologies of telecommunications and computers, effectively used in combination, could make a striking contribution to

> economic prosperity and the general quality of life in Canada; to the development of remote and sparsely populated regions of the country; to the extension of French and English broadcasting services from coast to coast; to the ability of individuals and groups in Canada to express themselves and communicate their views in the language of their choice; and to Canadian acceptance of responsibility for participation in the achievement of international objectives, especially the social and economic development of less fortunate countries in many parts of the world.

The first chapter of Instant World thus set out a philosophy and staked out the turf for the DOC. The report went on to discuss the nature of telematics and the issues of technology-versus-humanism that it had raised. The remainder of the book provided a primer on the varied aspects of communications in Canada, the public policy concerns related to them, and proposals for dealing with existing problems and new challenges. Some of this material will be the subject of later references, but three points may be made here.

Broadcasting. Neither the Telecommission studies nor Instant World could avoid overlapping into this field. Given the integral role of broadcasting in Canadian communications, and the extensive regulatory and supervisory powers of the CRTC, it was apparent that there would have to be a rationalization of the relationship between the DOC and the CRTC.

Planning. In chapter 10, "The Art of Survival", the report returned to its theme of the primacy that social concerns should have in communications planning and policy. It said:

> In the current turmoil of dissatisfaction with things as they are, the most common criticism -- and one deserving serious

> attention -- is addressed to past failures to maintain a proper balance between the economic and social effects of technological innovation, or even to take the latter into account at all.

Referring particularly to the area of research and development, the report urged that to overcome the hostility of industry to government planning, industry be brought into the planning process, and that care be taken to associate social and political scientists with it also. (This viewpoint was reflected later in the appointment of the Communications Research Advisory Board in 1974).

U.S.-Canada Relations. While Instant World offered a global view of communications, the special and imbalanced continental relationship of Canada and the United States was a recurrent theme. The present or potential effects of U.S. overflow in several fields was noted: broadcasting, databanks, innovative technology, commercial influence, public-policy influence.

The emphasis on social policy of Instant World and Privacy and Computers, and hence of the DOC at that time, was underlined in an article on the planning exercise, "Social Planning of Communications", written by Gotlieb, the Deputy Minister, and Gwyn, the director-general of socio-economic planning, as a chapter in Communications in Canadian Society (Communications, p.91). They wrote:

> Canadians are blessed with one of the best communications systems in the world ... Yet with the conspicuous exception of broadcasting, this communication system has developed with few deliberate, or even conscious, attempts to make the system responsive to determined social goals.

Attention to social goals was particularly important in the new communications, since

> even when the environmental effects of technology are evident they are necessarily often ambivalent ... (C)omputerized data banks could be used to make vast stores of information available to almost everyone and thus greatly enhance the public's ability to participate in the political decision-making process, or alternatively those same systems could be used to centralize the storage and processing of data and thus reinforce the power of central authorities at the expense of individual members of the public.

Like the authors of Instant World, Gotlieb and Gwyn quoted Professor Alan Westin of Columbia University who told a Telecommission seminar, "As a function of its complexity and cost, information technology tends to reinforce the powerful." The two authors therefore insisted that

> if the power of information technology is accepted then the need to plan its development toward broad social goals is evident. The method of doing so requires two simultaneous approaches: systematic attempts must be made to predict the probable environmental consequences of impending communication systems; at the same time, the specific policies for the development of communications systems must take account of all environmental dimensions -- the social, the cultural and the political as well as the technical and the economic.

The social approach was exemplified in Branching Out, the report of the computer/communications task force under Hans von Baeyer, which viewed telematics as "a key area of social and industrial activity". The report saw the use of computers extending from medium to small business and to professionals in the 1970s and then moving into the general consumer market in the 1980s. The policies advocated by the task force, as outlined in its summary, were centred on two main concepts:

> first a strong emphasis on maintaining and developing a competitive and innovative industrial environment throughout the whole field of computer/communications, which combines the two functions of data-processing and data communications; and second, a strong emphasis on the role of government in fostering the development and self-reliance of industry, and in maintaining a proper degree of Canadian independence in this field.

Two key recommendations regarding the provision of data communications were that:

(1) Government should assume a coordinating role in the gradual evolution of a coherent data communication network, essentially based on the networks of the existing telecommunications carriers and aimed at providing the flexibility, variety and cost-effectiveness required for distribution of computer services throughout Canada and for compatibility with foreign computer networks; and

(2) In the interest of stimulating innovation in the provision of data communication services, competition between existing common carriers should be encouraged, and existing entrepreneurs should be permitted to supplement certain common carrier services.

The task force was deliberately down-to-earth, gradualist, and specific in its approach. It was mindful that the

> vision of the technology being able to provide the ultimate solution to all of today's ills was particularly prevalent during the mid-sixties, to the extent that new problems were being sought for which there might be a technological solution. The rush to apply the technology tended to overlook two important questions:
>
> . Was there a clearly defined problem to solve?
>
> . Was computer/communications technology the best means of solving the problem?

Small decisions that could bring about big changes, such as the attachment and interconnect decisions summarized as a recommendation in no. 2 above, were the style of the von Baeyer report. It urged that government should take a "stimulative approach" to the development of telematics, with "a continuing awareness of user needs and social impact". There were areas where market forces either did not operate or were too restrictive of user choice. Here, government -- federal or provincial -- had a role. Examples were performance standards, education and training, availability of information, and monopoly services. (The criteria proposed by the Task Force for program analysis are given in Appendix 1.)

The task force urged that there should be a "focal point" for dealing with telematics in government since "the issues of computer/communications represent a highly complex mixture of technical, economic, social, jurisdictional, and institutional problems, which are all interrelated and, in addition, are subject to rapid change". Citing the duties of the Minister of Communications in the legislation already quoted, the task force recommended that "the Minister of Communications and his Department should be the designated focal point for co-ordination in the development and continuing assessment of national policy for computer/communications".

The principal functions of the DOC as focal point would be strategic planning and program coordination. On the question of strategic planning, which is the particular concern of this report, the task force said:

> The orderly development of computer/communications systems in Canada is dependent upon realistic long-range plans, based on needs and capabilities, taking into account existing conditions, trends, and potential problems as identified through a continual monitoring process. The need for future-oriented, multi-disciplinary planning is now receiving wide recognition and increased emphasis in many government and industrial activities.

The report on Privacy and Computers, which later gave rise to provisions in legislation, indicated the need for a continuing watch as telematics, with its computers, databanks, terminals and interactive transmission systems and networks, grew in scope and efficiency. The report said that "the critical fact is that computers shape, and to a degree even predetermine, the ways by which people may invade privacy. Computers, as a consequence of their own efficiency, break down many of the protective barriers of inefficiency which in the past helped to shelter privacy".

The task force also made a remark which relates to the spin that may be put on planning in the field of informatics by the nature of the beast. It said (p.119):

> Computers are most efficient when dealing with information that can be quantified and systematized; information that is intuitive, ambiguous, emotional is much more difficult to computerize. As a consequence computers may reinforce the importance in the decision-making process of the technocrat over the humanist, the objective over the subjective.

Two Green Papers: policy and practice

The planning exercise was followed not with the originally intended White Paper, a firm statement of government policy intentions, but with two Green Papers, or discussion papers that put forward policy proposals and the reasons for them in a more tentative way. One, a document with a bright green cover issued in March 1973, was a sweeping overview that presented

communications policy as an amalgam of national, cultural, social, broadcasting, telematics, and telecommunication-transmission policies. The other, issued the following month with a drab green cover, dealt specifically with telematics and amounted to a scissors-and-paste job on the von Baeyer report.

For several years the first paper was to be more important to the political life of the country and the development of the CRTC, while the second was to be more important for planning and workaday life in the Department of Communications.

The general paper, Proposals for a Communications Policy for Canada: A Position Paper of the Government of Canada, was submitted to Parliament on behalf of the Government by Gérard Pelletier, by this time Minister of Communications. It was said to present "optional solutions ... for public discussion", but the contents made clear that the most important discussants Ottawa had in mind were the provinces. In the Telecommission studies and reports emerging from them, federal-provincial jurisdictional matters had been taken as a rather murky "given" that would demand consultation and cooperation between the two orders of government. The Green Paper sought to present the big picture of national interests in communication and how governments and their emanations might fit into it.

Above all, the Paper dealt with communication as national policy, and in two ways: first, "counter-balancing the strong north/south pull of continentalism; second, fostering national unity and identity in a Canada of admittedly diverse cultural and regional components". The Green Paper saw this national coherence of communication policy as necessary at a time when

more than ever before, it is clear that the technologies and economic aspects of communications are intimately related with their social and cultural implications.

This reflected the message of Instant World, as did the Paper's stress on "the evident and growing tendency for many formerly distinct systems of electronic communications to become interconnected, more integrated, and more powerful". But the Paper was going out beyond the limits of the Telecommission's terms of reference and introducing a broader integration of communication concepts -- introducing, in fact, ideas that proved politically explosive.

The scope of the document is indicated by its list of "prerequisites for the achievement of national objectives":

- the provision of fuller and more diverse Canadian sources of information, entertainment, and cultural and educational material of excellent quality;
- the development and preservation of high-quality telecommunications systems linking all parts of the country, so that as many Canadians as possible may have equitable access to the services provided;
- the efficient use of available skills and material resources, and the most effective use of social and technical innovations; and
- the assurance of Canadian control, either through regulation or by restrictions on foreign ownership, of the entities offering telecommunications services of all kinds.

The Paper deliberately refrained from proposing specific programs, much less assigning responsibility to particular departments, on the grounds that this would have to await federal-provincial discussion. In the event, the wait to implement large parts of the Green Paper was a long one: the "immediate challenge" of the 1973 Green Paper has turned out, in large part, to be the current (1982) challenge to planners and policy makers in the Department of Communications and other departments and agencies involved in communication, cultural, social, and industrial policy.

The Green Paper called for recognition of a "national dimension" in the telephone system, a system which is at once difficult to describe, more difficult to explain, and one of the best in the world in the context of what most people expected from a phone system a decade ago. The Paper laid the basis for bringing common-carrier telecommunication regulation, as well as broadcasting regulation, under a re-named Canadian Radio-television and Telecommunications Commission a few years later, something Ottawa could do on its own. The Paper also prepared the way for the attachment and interconnection policies that were to introduce a new element of competition in the telecommunications equipment and services industries, as had been done in the United States in 1968, and as had been recommended by the von Baeyer task force.

The Green Paper noted that both cable and satellite transmission services introduced "yet another obscurity into the once relatively clear distinction between broadcasting and point-to-point forms of telecommunications".

The Green Paper declared that in telematics systems providing remote access to databanks over telecommunications networks, "Canadian content will be as much a matter of concern as it already is with regard to broadcast programming". But computer service in the home was in its early days and "it is at present too early to determine the proper balance of policy that will best serve Canadian interests and values in this regard". The evolution of telecommunications had "created a grave imbalance between the resources devoted to the development and technology of systems, and those devoted to the creation, production, and distribution of programming and information content". The regulatory agency would have to see to "the attainment of a proper balance between the social, cultural, economic, and technical aspects of communications, in accordance with clearly stated national objectives".

But how could the government at one and the same time assure the independence of regulatory agencies and their adherence to broad government policy? The Green Paper said:

> (S)ince it is impossible, particularly when drafting a statute dealing with so complex a subject as communications to foresee all the social, economic, cultural, and technological developments and new situations that may emerge, opportunity must be provided for the Governor in Council to give directions, compatible with the statute, as to the policies to be followed in pursuing national objectives.

But there would have to be exceptions to such authority to make sure the government did not use it to show favoritism to licence applicants or to interfere with programming and free expression.

To summarize, the Green Paper gave a broad interpretation to communications policy, making it parallel to existing policy for broadcasting. The full range of this policy was to be applicable by the government, on the one hand, and the regulatory agency, on the other, with the government to be given authority to assure that the agency adhered to national objectives.

In the event, the jurisdiction of the CRTC was broadened, but the means of making it responsive to government direction are only today the subject of cabinet action. In the meantime, the role of the Department of Communications in general communication policy-making was not specified. The effect was to create two departments of communications, the DOC and the CRTC, with the CRTC through its extensive regulatory and supervisory authority being the stronger of the two in several broad and critical policy-making areas (to be discussed later in this report).

From the bright green vision of March 1973 we turn to the drab green prescriptions of April in Computer/Communications Policy: A Position Statement by the Government of Canada, presented as "a positive basis for discussion with provincial governments and others who share the federal government's concern with this vital area". In retrospect this Green Paper appears to have been more a matter of giving the DOC, and others, something to be getting on with. The Statement touched the bases of the von Baeyer report in data communications, industrial development, new informatics systems and applications, and coordination of telematics in the federal government. It accepted the view that government should be mainly a "catalyst" adopting a "stimulative" approach. But in dealing with systems, applications, and the "public good", it stated:

> Also taken for granted is the need for rational guidance, so that the beneficial promise of computer/communications will be achieved through conscious planning -- rather than being left to the unpredictable working of the market-place.

(What's exactly what happen

But the government diverged in an important way from the task force's concept of a focal point for strategic planning and the coordination of programs. The original recommendation, combined with the minister's powers under the Act, would have come close to making the DOC itself a central agency of government; that is, a department with authority over other departments. The government drew back from this. The focal point would be created by setting up an interdepartmental committee with "broad policy and program responsibilities". The chairman and a small secretariat would be drawn from the DOC. Strategic planning would be bi-focal: both DOC and the Department of Industry, Trade and Commerce were to strengthen their strategic planning capability in telematics.

What happened in practice to planning in, and of, the DOC in the wake of these ambitious policy papers?

The broad vision of communication policy went off to the electoral and federal-provincial wars, in which much of it was to remain mired for some years to come. The telematics policy struggled for its place in the sun among the "line" functions that the DOC had inherited, particularly the glamor business of putting up communications satellites, the demanding work of managing the electromagnetic spectrum, and the tugs of both on the research and development capability of the department.

During and after the planning exercise of the Telecommission, departmental planning was under an assistant deputy minister, a source of

conflict since ADMs of other sectors did not care to be planned by a peer. At the time the focal point apparatus was set up in 1974, this problem was solved by making the ADM in question assistant deputy minister of research. Both the interdepartmental committee and the computer/communications secretariat were disbanded by 1978.

"The focal point was a problem in bureaucratic terms," I was told in an interview by one of those who had been connected with it at a senior level. "Interdepartmental committees usually have a very definite life span, dealing with particular issues over a limited period. The tendency is for them to start at the deputy minister level, then the deputy minister delegates an assistant deputy minister, then the ADM delegates a director-general, and so on, until they peter out".

The secretariat followed the committee into oblivion. It had served as a focal point in the department for monitoring and analyzing trends, issues, and policies in the rapidly developing field of telematics both in Canada and abroad. The development of strategic planning capacity at the departmental level in the field of telematics did not occur in either the DOC or ITC. Both action planning and environmental planning tended to be compartmentalized in the sectors and directorates of the departments. True, there was a "policy" sector in DOC under a senior assistant deputy minister, but by the nature of its position and mandate there were limits to the extent to which it could coordinate and plan for the whole department, let alone for the many departments and agencies with which the DOC had business. Indeed, the policy sector was in somewhat the same invidious position as the earlier planning sector; that is, it was clothed with authority to "make policy" for line sectors which preferred to make their own policy and often did just that.

Hiatus: political and administrative strains

The hiatus of the 1970s in communications planning in general, and Department of Communications planning in particular, has to be seen in relation to both the political developments of the times and the reforms of governmental decision-making methods and organization that were undertaken by the Trudeau ministry.

The planning exercise in the DOC was, as mentioned, a pioneering work which alerted the public, and more particularly the provincial governments, to the social and cultural import of the new communications for those who exercise power. What Instant World and the other offshoots of the Telecommission were spelling out to Canadian policy makers were the importance of "Communication Theory and Political Integration" and "Transaction Flows as Indicators of Political Cohesion", to borrow a couple of chapter headings from Karl W. Deutsch in The Integration of Political Communities, published in 1964. "What interests us in politics," said Deutsch (p.78), "is the quantity of people in communication with each other."

The province of Québec was already alerted to the issue. A project for direct satellite communications between Québec and France had been a subject of contention in the Ottawa-Québec-Paris triangle of the late 1960s.

Now, in the early 1970s, the Québec government developed a policy of "cultural sovereignty" for the province, and its communications

department became one of the most active in pressing this aspect of provincial autonomy. Then, in 1976, the Québec election brought to power a government that believed in sovereignty, period. But other provinces, several of which owned their own telephone companies, and regulated them as well, were also becoming alert to the "integrative" and power-defining nature of communication systems. As Ottawa recognized in the "bright green" Paper, major federal-provincial negotiation lay ahead to fulfil the "essential" condition "that there should be agreement among all Canadian governments on the objectives of a communications policy for Canada" (Proposals, p.35).

Communication concerns were, of course, but a part of the broad constitutional effort in the late 1970s to accomodate three thrusts: national unity in federalism, Québec nationalism, and regional -- particularly western -- particularism. This was the political "environmental factor" which would have had a strong effect on communications planning in Ottawa no matter how good the administrative arrangements for it had been.

What were the administrative arrangements for planning in the period with which we are concerned?

Much has been written about them in scholarly books and articles. Our main reference here -- and one which draws on the others -- is How Ottawa Decides: Planning and Industrial Policy-Making 1968-1980, by Richard French, a business management specialist and teacher who worked in the Machinery of Government Directorate of the Privy Council Office from 1974 to 1977 and is now a member of Québec's National Assembly.

In an earlier period, a general sense of coherence and direction had been given to the machinery of government by the "mandarinate", according to J.L. Granatstein's The Ottawa Men: The Civil Service Mandarins 1935-1957. Although he credits his heroes with roles that make everybody else in Ottawa sound like "voices off", Granatstein effectively describes the similarity of educational attainment, leadership style, social outlook, and unadvertised political viewpoint that enabled this group, largely through informal means, to influence and mediate policy-making across the key Ottawa departments. The age of big and pervasive government put an end to the adequacy of this type of arrangement, as did the hostility of the Progressive Conservative opposition, which saw it as a kind of conspiracy of the governing Liberal party and the bureaucracy to perpetuate their power. An effort to rationalize the machinery of government was set in motion by the Diefenbaker ministry, with the appointment of the Glassco Royal Commission on Government Organization, and by the succeeding Pearson ministry, with implementation of the Glassco Planning, Programming, Budgeting System (PPBS), the strengthening of the Privy Council Office to give the prime minister greater control at the centre (Pearson being ever mindful of the extend to which departments had become ministerial fiefdoms in the St.Laurent ministry), and the development of the cabinet committee system.

In taking up the story, French offers the following definition of planning:

> Planning is the attempt to place government policies and programs within a suprasectoral or national context to permit political decision-making about their relationships and relative priority.

He recounts that when Mr. Trudeau came to office in 1968, he and his advisers "were determined not to continue the government-by-crisis pattern which characterized the Diefenbaker and Pearson administrations". A "commitment to planning, policy formulation and co-ordination" was fundamental to the new administration. A more collegial style of government was to be linked to careful planning in the central agencies of government, "those which exist to co-ordinate and control the activities of the so-called line departments (which deliver programs to the public)...". French reports that there was optimism about the effectiveness of new forms of analysis, a positivist view of the social sciences, and a receptive attitude toward fashionable forms of corporate planning. Galbraith's "technostructure" was to replace the mandarinate:

> A new generation of technocrats, whose claim to involvement in the solution of public problems lay in their formal training and substantive expertise rather than in seniority and experience, saw in the planning movement an ideal instrument to speed the supplanting of the mandarinate and their own succession to power.

In the event, however, conflicting sources of planning dirigisme produced a kind of immobilisme. The Privy Council Office, the Treasury Board Secretariat, and the Finance Department produced "three different agency philosophies about planning during the major part of the decade". Each version became a constraint on the others.

The cabinet planning system in the PCO was "based on an ecletic (critics said incoherent) mixture of corporate planning theory, cybernetics and systems, with a smattering of technological forecasting and futurology". The Treasury planning system proceeded from strict evaluation techniques to

"a more systematic framework of government goals and objectives than the Cabinet Planning System was able to provide" -- or than any democratic system could provide, one might add. The financial planning system, meanwhile, embodied a "'steady as she goes' macroeconomic policy, which assumed that structural problems would in time take care of themselves".

But planning there was, and the emphasis on it at the centre of government affected the departments:

> Between 1965 and 1975 ... the whole notion of policy and objectives as conceptual frameworks, above and beyond particular programs, and knitting such programs together, spawned a profound change in the atmosphere, norms, prestige structure and career patterns in the federal service. Where program management and broad experience were once the sole qualifications of any significance, a new, parallel, and in many ways attractive career path in the policy, planning and analysis functions opened up.

In French's view, the incompatible central planning philosophies produced fatigue in the whole system -- "analysis paralysis", as it was called in Ottawa -- and made it politically unresponsive, as the reduction of the government to minority status in the 1972 election indicated. During the 1972-1974 period, which was when the fruits of the Department of Communications' planning exercise were being translated into government policy, the government's preoccupation was to be responsive to immediate political issues. After the 1974 election had restored majority government, a broad ill-defined exercise in setting government priorities was undertaken, but gave way the following year to concentration on the problem of inflation and the resort to wage and price controls. Immediate economic problems remained preoccupying but were joined by constitutional concerns, and the future of the country, as overriding issues of national policy.

French scarcely mentions the Department of Communications in painting his broad picture, but is is plain that the early emphasis on planning in the DOC, and the later de-emphasis, corresponded to the general trends in Ottawa during those years. Of particular relevance to the DOC is his account of the conflict between macroeconomics, or big-lever economics, and microeconomics, or structural-change economics. The conflict can be seen in the reports of two different senate committees, one on foreign affairs advocating free trade with the United States, the other on science advocating structural change to heighten the science content of Canadian industry. Or it can be seen in a similar confrontation between the Economic Council of Canada, in its days of advocating world free trade eventually and free trade with the U.S. now, versus the constant and ever more urgent reports of the Science Council of Canada arguing for "technological sovereignty". Within government, we see the macro approach of the finance department against the micro approach of the PCO planning group and departments more concerned with industrial structure, such as the Department of Communications.

From pressing an overall "industrial strategy" in its early years, the Trudeau ministry retreated to a policy of sectoral and regional initiatives. Central planning and technocratics gave way to political exigencies and pragmatics.

French observes:

> One of the reasons that industrial strategy is a classic planning problem is that it not only requires a significant degree of concertation within the federal executive but also between the federal and provincial governments and between governments and the private sector.

He quotes Richard Simeon, director of the Institute of Intergovernmental Relations at Queen's University, to the effect that: "Ottawa has neither the constitutional and fiscal power, nor the political legitimacy to be responsible for industrial strategy on its own."

The various problems of consultation, co-ordination, and planning in the area of industrial strategy had been taken into account in the DOC planning exercise, particularly by the von Baeyer task force. But in the environment of the second half of the 1970s the recommendations, even where implemented, as in the case of the focal-point apparatus, tended to wilt.

In his general conclusions on the central planning systems of the late 1960s and early 1970s, French says their failures

> can now be traced to the anti-political assumptions of the systems themselves, notably the idea that such instruments could be so compelling in use as to dispel that mélange of ambition and idealism, ignorance and wisdom, selflessness and self-interest, which characteristizes any kind of collective decision making.

"Planning," he writes, "is a search for overriding criteria against which decision-making about the relationship and relative priority of policies and programs may be undertaken." But "planning without public consensus and support becomes sterile and diffused".

French found that by the end of the 1970s:

> It is now difficult to find planners in Ottawa. People describe themselves as policy advisors, co-ordinators, evaluators, managers, but rarely as planners. The notion currently evokes an unappealing image within the bureaucracy ....

New Directions: expansion and indigestion

The dispersal of the Department of Communications' planning function to the various line sectors of the department, together with the apparent running down of the department's initial impetus, caught the attention of a number of advisory bodies. The Science Council had been urging the federal government, in tones of growing urgency since 1968, that Canada should mount a stronger industrial effort across the range of high technology, including computers and communications. Closer to home for the DOC, the Communications Research Advisory Board was stressing the importance of planning. Here are some excerpts from its April 1981 report for 1980-1981:

> We have, in previous reports, stressed in various ways the importance of planning and the need for DOC to set in place a comprehensive planning process. We consider this a matter needing urgent attention....
>
> No organization, large or small, public or private, can be a continued success without embodying an active planning function....
>
> The information/communications industry is becoming the most important growth business in the world. Clearly defined, constructive and consistent support by DOC can play a vital role in shaping the Canadian opportunities in this industry. Although strategic planning is the responsibility of senior management, this does not mean that a support structure is not needed. On the contrary, it is essential.
>
> In 1978 the Communications Research Advisory Board proposed a planning position. In 1979 the board was gratified to learn of the establishment of a Planning Secretariat. Now the positions are vacant.

The Planning Secretariat mentioned in this report was established in accordance with a concept circulated by the deputy minister which outlined three types of synthesis that should be carried out by the secretariat.

1. It should bring together from all available sources -- cabinet documents, ministerial statements, Speeches from the Throne, and so on -- the broad objectives and priorities established by the government and relate them to the work of the department.

2. It should draw together into an environmental analysis the information on trends and events outside the department that could have a significant impact on its programs. It was expected that input would be obtained from professional journals, conferences, and contacts with people in industry, other departments, other governments, international agencies and universities.

3. Finally, it should bring together information from available evaluation studies undertaken to monitor the progress and results of departmental programs and policies.

These proposals followed the general lines, but not the detailed structure, of recommendations made by consultants in January 1979 (Price Waterhouse Associates, "Report on Organization of the Policy Sector and the Planning Secretariat".) The kind of problems that proposals for comprehensive planning at the departmental level run into from line managers -- "Planning is fine so long as it doesn't interfere with the way I want to run things" -- is indicated from the following quotation in an appendix to the Price Waterhouse report:

> In recommending a Planning Secretariat there is no attempt on our part to usurp or diminish the responsibilities of Departmental line and staff managers. Planning at all levels is their responsibility. The function of the Planning Secretariat is to act as a catalyst -- to stimulate, co-ordinate, advise, analyse and assist in the development of plans and decisions. Final authority for such decisions, however, must continue to rest with appropriate levels of management.

When even the modest, two-member Secretariat was allowed to lapse, the Communications Research Advisory Board returned to the attack. Its chairman, Ran Ide, was asked by the deputy minister of the department to advise on the most effective means of implementing CRAB's recommendation for "the appointment of someone with a documented and clearly successful background in strategic planning who will have overall responsibility for the function within the department, report directly to the Deputy Minister and be a member of the Senior Management Committee" (Ide-MacLean, p.1). Assisted by Don MacLean, then executive assistant to the deputy minister, Ide proceeded to hold structured discussions of planning needs with the assistant deputy ministers. Ide and MacLean were able to report a "composite view" of the ADMs in December 1981, including the following:

> [A] comprehensive planning process at the most senior level in the department, as recommended by CRAB, would help overcome the compartmentalization that sometimes exists between sectors in areas where coordination and cooperation would be more appropriate. By identifying a clear and consistent set of departmental objectives and priorities, it would also assist management in reallocating resources from low to high priority areas. Finally, by assisting senior managers in articulating the department's overall mission and ensuring that it is reflected in DOC activities, effective planning would improve the department's ability to communicate with the public, with client groups, with the federal and provincial governments and with its own staff.

The department is still struggling in 1982 to get the planning function actually established. The disenchantment after 1972 with comprehensive planning in government, described by French, appears to be deep-rooted and widespread. And the function of co-ordinating policies and programs, entrusted to the policy sector, seemed to break down into competition between the policy sector and the line sectors for the deputy

minister's ear. Rather than co-operating with one another, they tended to bypass one another.

In the meantime, the rundown state of Canadian communications policy in relation to the high purpose of the Telecommission world and the Green Papers had been the subject of a report in the dying days of the first Trudeau ministry -- in March 1979 -- by the Consultative Committee on the Implications of Telecommunications for Canadian Sovereignty. Appointed with a sense of urgency at the end of November 1978, the committee brought together a highly qualified group from communications, business, and economics under the chairmanship of a former justice of the British Columbia Supreme Court, Hon. J.V. Clyne. The former executive director of the Telecommission, Henry Hindley, was its secretary, and Pierre Billon, director of the ill-fated Planning Secretariat described above, was the associate secretary. The report was entitled Telecommunications and Canada.

Hastily covering much the same ground as the Telecommission, but this time with broadcasting very much included, the Clyne Committee often sounded like a cri de coeur from the DOC's initial planning exercise. The committee regretted that:

> In Canada the sense of urgency generated by the Telecommission disappeared. The federal and provincial governments embarked on long-drawn-out discussions. The educational technology program was discontinued in 1975 and the federal interdepartmental committee on computer/communications was dissolved in 1977.

Commenting on the fact that the intention expressed in the 1973 Green Paper of enabling the government to give direction to the CRTC had never been carried out, the Clyne report said:

> The absence in the Broadcasting Act of any general authority for the Governor-in-Council to give guidance to the CRTC in the implementation of the statutory broadcasting policy for Canada has had the effect of leaving the Commission to determine policy through an interconnected series of ad hoc decisions, with little regard for what our federal and provincial governments may deem to be in the public interest.

The committee noted that the communication problems faced by Canada in 1979-1980 were virtually unchanged from those taken up by the Telecommission and its offshoots in 1969-1972. It commented:

> The failure of the 'wired city' to spring instantaneously into existence has perhaps led to a complacency that could in the end be disastrous.

The committee said Canada was being swamped by foreign broadcasting. There was a danger that foreign interests would get the dominant share of the market for data processing services and that far too much of the information stored in databanks would be of foreign origin. Canada was heavily dependent on imports in telecommunications technology.

The committee said that despite Branching Out and the Green Paper on computer/communications "no policy has yet been formulated". Of the 39 recommendations in Branching Out, 36 had been addressed to the federal government, and among these, action had been taken in four cases. Action taken in five cases had been later discontinued. In 24 cases no action had been taken.

Discussing industrial policy and telematics, the Clyne Committee said, "We note that in this area there is a serious lack of co-ordination of government policies and programs". It was urgent to reorganize interdepartmental leadership in telecommunications. Discussing federal communication policy generally, Clyne called for the federal government to provide "leadership and long-term planning".

In the spring of 1979 a federal election brought about a change of government and in the winter of 1980 the government changed back again. But it must be remembered that the Trudeau ministry that returned to power in 1980 differed in some essential ways from the Trudeau ministry that went to the country unsuccessfully in 1979. The new 1980 ministry was a reform-minded government, determined to press forward with projects of constitutional and economic nation-building. In communication policy, this meant a return to the thrust of the "bright" Green Paper of 1973 and, in particular, the assignment in 1980 of responsibility for cultural policies to the Department of Communications, to which was transferred the Arts and Culture sector of the Secretary of State's department, together with the ministerial reporting function for the major cultural agencies.

As in the case of the organization of the DOC itself, a major planning exercise was undertaken, this time through appointment of the Federal Cultural Policy Review Committee under the co-chairmanship of Louis Applebaum and Jacques Hébert. The committee was created in the summer of 1980 to "undertake the first comprehensive review of Canadian cultural institutions and cultural policy since the Royal Commission on National Development in the Arts, Letters and Sciences of 1949-51, also known as the

Massey-Lévesque Commission". At the same time, the DOC became more active in policy-planning in the fields of broadcasting, copyright, transborder data flow, and regulatory reform in connection with the CRTC.

Like the Telecommission, the Applebaum-Hébert committee sought to combine the advantages of a royal commission with those of a task force responsive to the policy-formation issues facing the greatly expanded DOC. Extensive public hearings, preceded by a consciousness-raising exercise, were held and became the subject of a preliminary report, Summary of briefs and hearings. The degree of integration between department and committee became a subject of controversy owing to the membership of the deputy minister, and the assistant deputy minister of arts and culture, and they withdrew from the committee before it drafted its final report which, at time of writing, is pending. The incident indicated that the public has come to expect a degree of independence in task forces that is provided by statute and tradition in the case of royal commissions. It remains, however, that this type of inquiry can be more easily tracked by the department, more easily coordinated with departmental planning, and more easily made responsive to departmental guidelines if the department so chooses.

Meanwhile, the joining of culture and communications in one department has produced an uneasy partnership. Efforts have been made in the annual strategic overview to give them an appearance of responding to common policy concerns. Planning is under way for an "electronics and humanities" directorate in DOC's research sector. But with cultural policy itself still to be the subject of a government position paper, the problems of the fit between the cultural sector and the already existing sectors of

the department -- both conceptually and organizationally -- remain to be resolved.

Thus the picture we had of the DOC before 1980 -- compartmentalized, unclear in its direction, and lacking arrangements for the planning, coordination, and evaluation of overall departmental policy -- is aggravated by the new problems consequent upon the addition of the cultural sector.

This leaves the department unable to meet the standards of planning required by the government's Policy and Expenditure Management System (PEMS), which is the administrative means by which the principle of responsible government is realized in the spending of money. The system enables Parliament to examine the "supply" of resources to be granted the government both in broad categories and in elaborate detail, together with forecasts of spending for four years beyond the year in which Parliament is asked to translate spending "estimates" into resource "appropriations". The system also provides the means for Parliament to check back later and see that resources have been properly spent.

Generally speaking, approval for new policy and spending initiatives must come from one of four "resource envelope" policy committees of Cabinet dealing respectively with economic developement, social development, foreign and defence policy, and government operations. Within the projected fiscal framework, resources are apportioned to the committees, each sub-tended by a secretariat, with adjudication among them resting with the Priorities and Planning Committee, under the chairmanship of the Prime Minister. On the side of cost control and managerial efficiency, the

Treasury Board exercises government-wide responsibilities through its secretariat to assure that its criteria will be met before departments actually get money to spend.

The PEM System, flowing from the recommendations of the Lambert Royal Commission on Financial Management and Accountability, is described in the 1980 Guide to the Policy and Expenditure Management System. What concerns us here is the role that planning is intended to play in this method of tying policy to expenditure, and expenditure to policy. The Guide states:

> It is essential to effective multi-year policy and expenditure planning that systems be in place to enable departments and agencies to conduct forward strategic and operational planning, to control their activities, to ensure that they are achieving the desired results, and to evaluate the efficiency and effectiveness of programs in comparison with alternatives. These departmental activities provide the input to the central planning and decision-making process and are the basis for sound management of the execution of policy and program directions from Cabinet.

Of special importance to the type of general departmental planning being considered in this report, as distinct from operational planning, is a section of the Guide (p.19) dealing with the Strategic Overview:

> Departmental strategic planning involves the establishment of the department's role, its long-term objectives and the departmental strategies, policies and programs which meet these objectives. It is concerned with ensuring that the department's planning contributes to the development of, and remains responsive to, government policy and direction.
>
> Strategic planning is an ongoing process whose outputs may not be contained in a single document, but rather in a set of documents related to specific departmental program areas. However, it is

necessary to provide an overall perspective and annual focus to the strategic planning process in order that Ministers can relate departmental plans to the government's policy priorities and its overall expenditure framework. This perspective is provided by departmental Strategic Overviews.

In response to planning guidelines from the appropriate Policy Committee, all departments develop a multi-year Strategic Overview annually, for submission by the end of March to the committee, and to the Treasury Board for inforamtion. The review of this document by the Committee results in confirmation of, or modification to, the department's objectives, general policy direction, and strategies. It may also result in approval of some specific changes in policies and programs, or directions for further development of alternative changes for consideration by the Committee in due course.

The form and content of the Strategic Overview varies according to the nature of the activities of the departments, but includes:

(a) a review of the objectives of the department in the light of the overall and relevant sectoral priorities of the government, including the necessary changes to objectives;

(b) a review of alternative strategies for pursuing objectives, identifying associated costs, benefits and other issues;

(c) a description of proposed changes to currently approved policies and programs in relation to the department's objectives and strategies. Such policy and program changes include new programs or program enrichment, as well as elimination or reduction of service, benefits or activity in existing programs; and

(d) a summary of the findings of program evaluations and the changes proposed as a result of these findings.

In practice, the preparation of the Strategic Overview for the appropriate policy committees of Cabinet at the end of March is closely linked to the so-called "lodge meetings" (Keltic, Jasper, Meech Lake etc.) which bring ministers together to discuss the broad policy goals and priorities for the period ahead.

At the Meech Lake meeting in June of 1981, for example, Cabinet established an ad-hoc committee of ministers to bring together a framework for economic development. The upshot was Economic Development for Canada in the 1980s, issued in November of last year. The report envisioned the 1980s as a boom period and put emphasis on, first, resource industries (including the abortive energy mega projects) and transportation of bulk commodities; second, manufacturing "both to supply machinery, equipment and materials needed for resource development and to extend the further processing of resource products beyond the primary stage"; and third, the development and exploitation of advanced technology and high productivity goods and services.

The reasoning behind these priorities is summarized in the opening paragraphs of the document:

> The decade of the 1980s holds great promise, offering opportunities of unprecedented magnitude and the potential for lasting benefits from economic renewal to Canadians in every area of the country.
>
> The leading opportunity lies in the development of Canada's rich bounty of natural resources. There is increasing world demand for Canada's major resources -- energy, food products such as grain and fish, forest products, and minerals such as coal and potash. The 1980s will see substantial development of energy and energy-based industries such as petrochemicals, and further expansion of agriculture, forest-based industries and mining.
>
> These developments will involve massive investments in productive capability and in the transportation industry's capacity to ship bulk commodities. The recently published report of the Major Projects Task Force, for example, identifies $440 billion of potential projects, predominantly in the energy and resource sectors, which are under consideration for investment between now and the end of the century. At the same time, rapid population growth in the world is placing new demands on the supply of food, and in response to rising world prices further expansion and modernization of the agricultural and food sectors throughout Canada is in prospect.

> Linked to this growth dynamic, a second area in Canada is presented with exceptional economic development opportunities in manufacturing activity both to supply machinery, equipment and materials needed for resource development and to extend the further processing of resource products beyond the primary stage. The massive investment in resource development projects will generate many billions of dollars worth of opportunities for supplying these projects or developing new resource-based products, not only in the traditional manufacturing centres but also in the resource-rich regions where industrial diversification is a long-standing objective.
>
> The third direction of growth is also linked to resources but of a different kind -- namely the innovative resources of Canadians in the development and exploitation of advanced technology and high productivity goods and services. Canadian creativity has proved -- in manufacturing, engineering and service areas such as nuclear technology, aerospace, communications, electronic data processing, retailing and urban transportation equipment -- that we can place ourselves at the forefront of technological change in selected world markets.

Communications technology, equipment, and services are involved in each of the three thrusts, particularly high tech. But the ordering of priorities does not, of course, reflect the view of such sources as the Telecommission, the Science Council, and the Clyne Committee that advanced countries are moving toward an "information society" in which more than half the labor force already consists of "information workers". In this view, Canada would have to reorder and redefine the essentially traditional ranking of economic priorities in Economic Development for Canada in the 1980s. Regional and social concerns, together with the power of vested interests and conventional wisdom mentioned by Kierans at the very outset of the DOC, would make this difficult to do.

The documentation and interviews in government and industry conducted for this report provide evidence of a widespread view that one of the reasons for government lack of emphasis on information technology lies

in what several sources described as the inadequate "vision" of the DOC itself. Their criticism goes directly to the issue of comprehensive planning, the coordination of policies and programs in the policy sector of the DOC, and the ability of the department to express itself as a policy-making department, as well as a "line" department. While the department has achieved outstanding successes in satellite communications and the experimental stage of consumer-telematics through Telidon, and such achievements are immensely effective in public education, the criticism remains that the department has not "got its act together". It has not served as a focal point, to the extent that its talents and capabilities would support, for keeping Canada up to the mark in telematics in an extremely competitive world.

The Strategic Overview is regarded by many in the DOC -- and many in government generally -- as the departmental "sales pitch" for funds, rather than the more sophisticated policy document envisioned in the PEMS guide. It may be that the Policy and Expenditure Management System itself -- quite contrary to intentions -- puts a spin on policy-making in favor of big-ticket items. The bigger the expenditure, the bigger the policy. That is, the dominance of this type of policy-making system in government may serve to diminish the attention to policy-making that requires little or no additional spending -- "rules of the game" policy -- but could have as great or greater effects on social and industrial development of the country. "Projects" are simple and may be relatively autonomous. "Policies" are intricate and involve many interdependent elements. The DOC is strong on projects, weak on policy.

An Agenda for Planning

The priorities of an agenda for planning in the Department of Communications can be derived from the problems that have arisen in the absence, or weakness, of planning and coordination in the department. The rest of this report seeks to identify important areas under chapter headings descriptive of the main activities of the department.

Chapter II deals with telematics, the combination of telecommunications with informatics (computer-processing of information), with the emphasis on the programs the department has developed in informatics: Telidon, office automation, and government communications programs. These are seen in the light of the "policy framework for the economic development of the communications/information sector" prepared by consultants for DOC's policy sector.

Chapter III opens a diversion from the telematics theme to consider some conceptual problems with which the department has been faced in becoming a department of culture as well as communications.

Chapter IV develops the cultural theme by discussing the origins of current cultural policy in the development of broadcasting policy since the 1930s. The chapter veers back toward telematics in considering the regulatory problems that have developed in relation to broadcasting, as well as the problems of coordination between the regulatory agency (the Canadian Radio-television and Telecommunications Commission), and the Department of Communications and the government generally.

Chapter V, on communications carriage, titled "Transmission", brings us back fully into telematics and the basic questions of the capacity and sophistication of networks which were raised in the DOC's initial planning exercise. These problems are seen in relation to the vast increase in the capacity and variety of the means of transmission, and in relation to constitutional provisions and socio-economic policies affecting communications.

Finally, chapter VI suggests a mediative approach in defining the function and setting out the work plan of the group working under the Special Planning Advisor to the Deputy Minister of Communications.

II. TELEMATICS

Introduction: A Broader Constituency

As the Telecommission studies foresaw, computer/communications -- described here as telematics -- advanced in business and industry in the 1970s and also in the field of education. It was only in the 1980s that telematics began making a major impact on the consciousness of the general public in North America. In the winter of 1982, for example, three mass-circulation news magazines -- Time and Newsweek in the United States and Maclean's in Canada -- came out within a few weeks of one another with cover stories on the home computer boom. There has been something like a quantum leap this year in the amount of space that newspapers, particularly on the business pages, are devoting to telematics. In August the front-page feature of Barron's national business and financial weekly in the United States was devoted to the "Videotex Revolution".

The surge in general consumer interest means a change in the political environment for considering communication policy. Telematics will have a much broader constituency than the rather specialized one that has so far been interested in it. Telematics issues are more likely to become political issues.

In this chapter the emphasis is on information processing -- informatics. Chapter 5 will concentrate on information carriage -- transmission.

Overview

The leading edge of telematics activities in government is at present in the DOC's research sector. It is in fact a sector of research, development, experiment, application, promotion and industrial strategy. Also of great importance to the progress of telematics, owing to the government's extensive role as a user, is the DOC sector covering government telecommunications (as well as spectrum management). Finally, the policy sector of DOC, as the name implies, is where the bits and pieces are pulled together in policies relating communication capabilities to social, economic, federal-provincial, international and other policy-making areas of government.

The policy sector is at present trying to sharpen its capability for measurement and analysis. One of the contributing studies to this process is Toward a Policy Framework for the Economic Development of the Communications/Information Sector, by Price Waterhouse Associates (referred to hereafter as PW), completed November 30, 1981. The study covers carriage, equipment, content, and computer services; parts of it will therefore be more relevant to later chapters. Its main omission in relation to telematics is the field of in-house data processing, as distinct from the independent service bureaus, although in-house activity is estimated to be seven to nine times as large as open-market activity. (The omission was part of the negotiated terms of reference.) The PW report eschews the "revolutionary" view of telematics:

> We tend to be cautious about prophecies of a coming "information economy", "information revolution" or "third wave", despite the enthusiasm of a variety of authors, ranging from Toffler and Servan-Schreiber to the Clyne Committee. One reason is that such

> proclamations imply some sort of discontinuity. In fact, the communications/information sector was a major contributor to the Industrial Revolution and to subsequent development. The role of transport -- waterways, railways and ultimately highways and airways -- to the opening up of the broad markets and raw material sources required by large scale industry is obvious. The contribution of better communications -- printing, postal service, the telegraph, the telephone, not to mention equipment such as the cash register -- to the broadening of markets, the development of large organizations and the education of the labor force is less obvious, but undeniable.
>
> The recent growth in the importance of the communications/ information sector represents a continuation of this trend.

My own view is that while this interpretation puts a valid emphasis on continuity, it may underestimate the extent to which the present merging and extension of the media will change what they touch. The integration of informatics and transmission means that the old communications infrastructure, which sub-tended the organizations it served and which, like the transportation infrastructure, had points of departure and points of arrival, will gradually be replaced by an intrastructure of information and exchange which tends to envelop the organizations it serves. The PW view puts appropriate weight on the intractibility of human nature against being enveloped by technology. It will be a political problem -- a policy-making and a planning problem -- to see that the telematics envelope is flexible and adaptable to the needs and preferences of users. But "technology-push" or "systems-push" is inherent in telematics; there is no getting around the fact that it makes people change their ways.

"The average person seldom uses a library," said a DOC leader in social and behavioral research in an interview in Ottawa. But videotex would demand of its users some of the librarian's skills, no matter how

simple and user-friendly the accessing procedure could be made. "Over the next 20 years or so, retrieval methods will be a major concern."

In Toronto, a specialist in educational courseware explained why new courses were tested on some 15,000 students before being finalized. "If a teacher doesn't show up for class, they'll cheer and go home. If computer teaching doesn't work, they'll smash it."

As the Science Council has pointed out, the technology is "transformative". People -- and organizations -- react to the transformation as they derive new benefits, needs, and problems from it. They conceive what they will come to think of as "rights" toward the new technology, and these will be an adaptation of old rights, human nature remaining unchanged.

In describing the information society, the PW report distinguishes the gradations of information-intensity within it. While 100 per cent of society consists of communications/information users to at least some extent, and 40 per cent or more of employment is in information-intensive industries, somewhat less than five per cent is in the business of preparing, processing and transmitting information, or producing, selling, or maintaining equipment, software and other means of handling information. The significance of the communications/information sector does not relate to its percentage of gross national product or employment, but rather to its critical role in making the whole economy function.

The PW report describes six analytical tools that were used in the study: product life cycles, growth-share portfolio, learning curves, breakeven analysis, portfolio effect, and sector mapping (pp. 16-30).

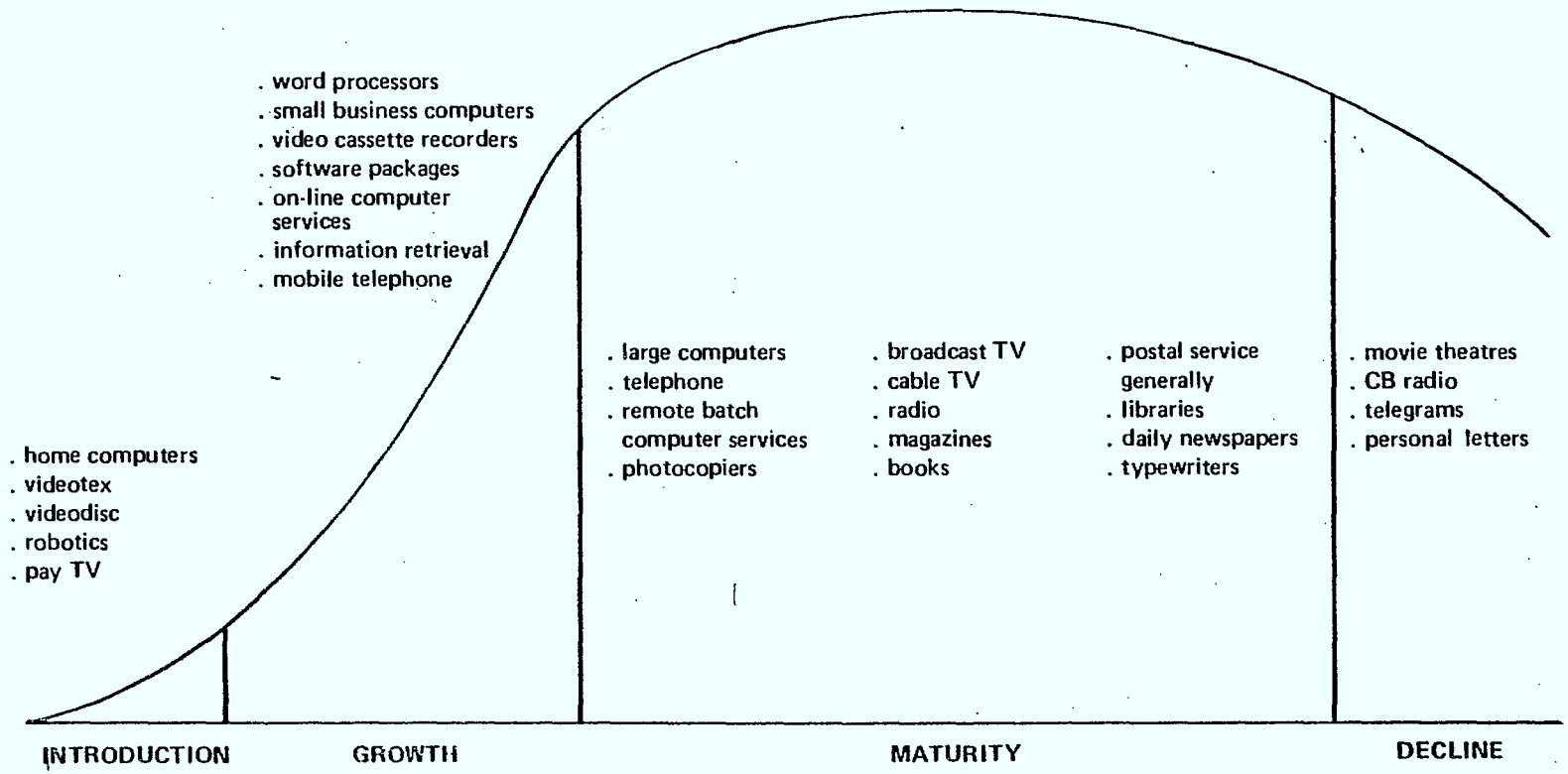
Product life cycle (Figure 1) posits a curve which typically rises slowly during an introductory phase, then fast during a growth period. Then the curve goes into a long, shallow dome during the maturity phase, dropping off sharply into decline when, if ever, decline comes. (The wheel, for example, has had quite a long maturity phase).

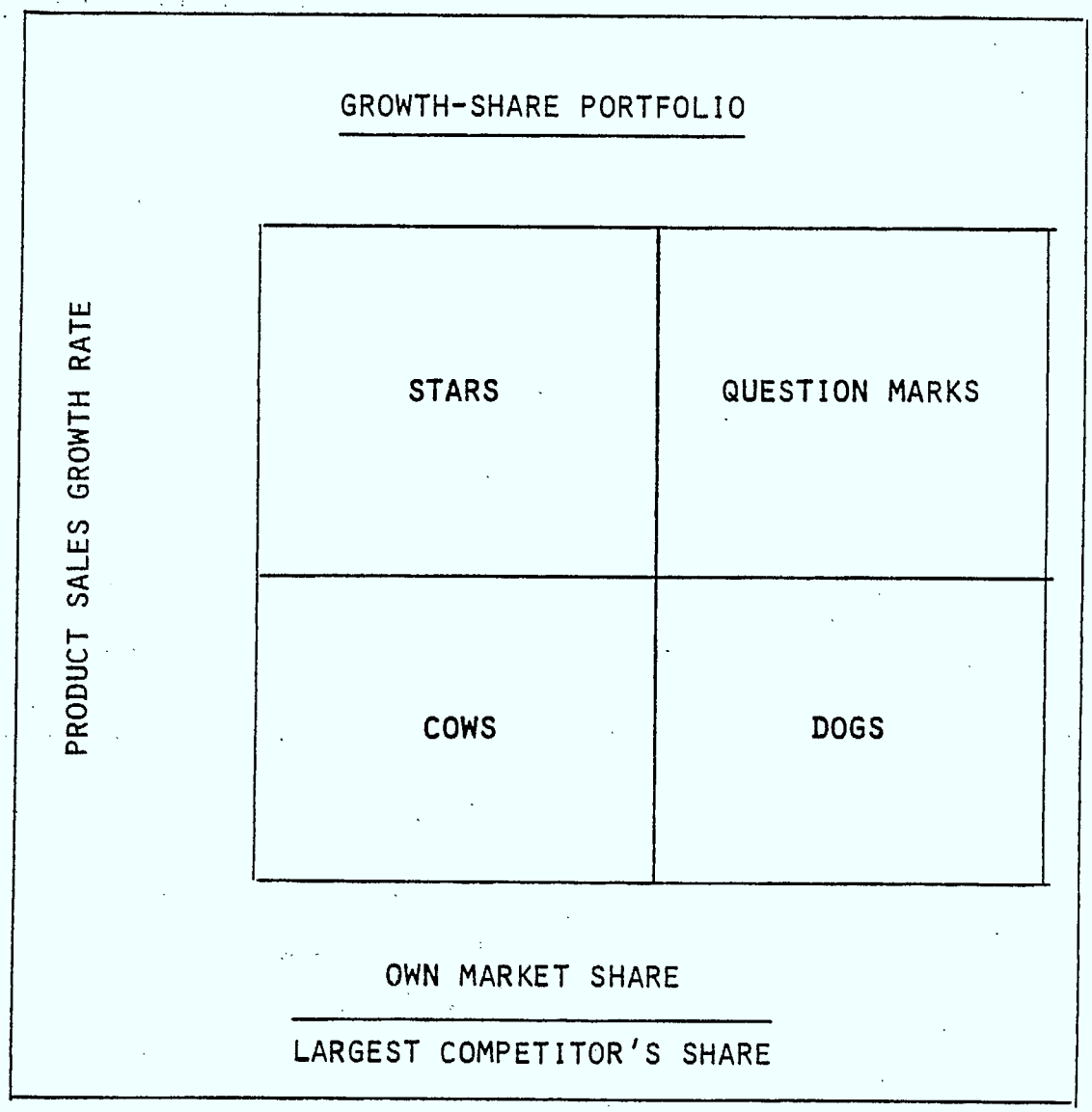
Growth-share portfolio (Figure 2) is a corporate scheme for using mature, "cash-cow" operations to foster "stars" or "question marks" in the introductory or growth phase, while getting rid of "dogs" in decline.

The learning curve, applied frequently in high technology industries, posits that the task of completing a given task or unit of a product will be less each time the task is undertaken: labor becomes more productive with experience. "In corporate strategy," PW continues, "learning curves are used to justify a strategy of entering a market early and pricing aggressively in order to maximize cumulative production and develop a cost advantage." PW further observes:

> Learning curve analysis is consistent with the growth-share portfolio approach in supporting a niche-oriented strategy for Canada in international markets. Where it differs is in suggesting the value of an early start, or of stimulation of domestic sales at an early stage in order to build up production experience. The government has sought to apply this principle to equipment for Telidon.

PRODUCT LIFE CYCLE




GROWTH-SHARE PORTFOLIO
PRODUCT SALES GROWTH RATE
STARS
QUESTION MARKS
COWS
DOGS
OWN MARKET SHARE
LARGEST COMPETITOR'S SHARE

Breakeven analysis, relating profit or loss to sales volume, can be used to examine the sensitivity of profit margins to changes in volume. A product with high fixed costs, as in most of the telematics area, will be characterized by far more spectacular profits, or losses, than one with relatively low fixed costs.

> The implications of high fixed costs depend largely on the predictability of demand. For telephone and cable systems, where demand is relatively stable (or growing at a reasonably steady rate), they are not a major problem. In the content and software areas, however, the profitability of individual products is very unpredictable.

Portfolio effect is a less integrated way of looking at investment balancing than growth-share portfolio.

Sector-mapping is a way of clarifying concepts by placing products and services in relation to one another according to their dominant characteristics. The communications/information sector map (Figure 3) developed by PW shows enterprises in the sector against a vertical axis extending from "end-products" at the top to "means" at the bottom, and a horizontal axis extending from "carriage" at the left to "content" at the right.

Life-cycle, growth-share portfolio, and breakeven analysis were also the main tools used by the Royal Commission on Newspapers in its analysis (RCN report, ch. 5; RCN research, vol. 4, part II), under the guidance of Laurent Picard, dean of business management at McGill University who was one of the three commissioners. The analysis contributed to the Commission's view that public policies were needed to offset the effect of

COMMUNICATIONS/INFORMATION SECTOR MAP

END PRODUCTS/SERVICES ^

Postal Service Courier Service Telephone Service Telegraph Telex Telepost Intelpost Paging Services Mobile Radio/Telephone	Bookstores Newsstands Cable TV Libraries	Newspaper Delivery TV Broadcasting Radio Broadcasting Cinemas Telephone Answering Service	News Wire	Books Magazines Video Discs Video Cassettes Newspapers Sound Recordings
Leased Lines	"White Pages" Intelligent Networks	"Yellow Pages" Industry Networks	Bibliographic Services Service Bureaus	Films TV Programs Databanks Trade Directories Catalogues Custom Software System Houses Commercial Printing
Satellite Operators Microwave Systems	PABX's		Systems Software Film Laboratories	Application Packages Studio Rentals Recording Studios
	CB Radios TV Converters Telex Equipment Telephones	Telephone Answering Equipment VCR's TV Receivers Radios		Phonographs Video Disc Players Microform Equipment Copiers Printing Equipment
Mail Sorting Equipment Switching Equipment Microwave Equipment Earth Stations Satellites Concentrators Multiplexers Wire and Cable Fibre Optics	Modems	Broadcasting Equipment	ATM's POS Equipment Banking Terminals Computer Terminals Communicating WP's	Typewriters Sound Recording Equipment Video Cameras Dictation Equipment Text Editing Equipment Word Processors Calculators CPU's

MEANS v

< CARRIAGE

CONTENT >

business concentration on the free flow of information and opinion to the public from a diversity of sources.

The PW report identifies five policy "themes" into which the issues of the telematics area and the broader communications/information area can be organized (PW, pp. 163-167) and these are appended as appendix 2 of this report. In summary, they are as follows:

1. Rationalization/competition. Where strong foreign competition exists "one would therefore incline to a policy of rationalization to create a few Canadian-based companies which have the scale and the financial strength to invest in research and development, to sell aggressively on a world scale and to produce efficiently". This view is the same as that of the Clyne committee, which said in relation to the electronics manufacturing industry, "It would clearly be advantageous for Canada if the existing structure could be condensed into a small number of larger firms able to compete internationally."

2. Picking winners. Although it appreciates the need for Canada to specialize as a country (see below), the PW report is leary of government selection of a limited number of "winners", be they products, product lines or firms, on which to concentrate government support. There is bound to be uncertainty about technological feasibility, long-term cost and market acceptance of new products. Government may be more influenced by "technological glamor than by real market prospects", by perceived social and cultural benefits than by commercial feasibility, and by politically influential vested interests more than by the needs of the economy.

3. Multinationals/Canadian firms. The report says that even when multinationals, such as IBM, live up to Canadian guidelines for balancing imported content with made-in-Canada content, the balance tends to be obtained through "manufacturing relatively low technology products such as typewriters in Canada to offset imports of mainframe computers". At the same time, it would be advantageous for Canadian-based affiliates of multinationals to have world-product mandates, and Canada has to remember quid pro quo since it has its own multinationals. On balance, though, PW's general rule would be to focus support on Canadian-based companies and to maintain Canadian control over emerging firms.

4. Protection. Protective policy is usually ruled out because of the interests of Canadian business users in access to critical technology at competitive prices, Canadian consumer demand for broad choice, and the sheer technical difficulty of erecting barriers to entry of computer processing and software packages. "Policy must therefore focus in most cases on strengthening Canadian industry so that it can compete more effectively, rather than protecting it."

5. Specialization. The smallness of the Canadian market means Canada must compete in North America or worldwide. It can only achieve the scale of operations required to do so if it specializes.

In looking at trends, the PW report expected continued rapid growth in business telecommunications, integrated office systems, electronic information services (primarily for business use but with some home demand),

application software, electronic games, and transaction systems. The same stages of growth envisaged by the von Baeyer task force were foreseen (p. 140):

> Opportunities for growth for some communications/information companies may come from expanding their market from large businesses to smaller ones, then upper income households, then the population as a whole. This is the progression envisaged by many for computers, and is one possible growth path for videotex.

This view in the summation section of the report reflected an earlier (p. 118) view of the developments leading toward videotex, which we might define here as consumer telematics, as distinct from producer (government and business) telematics:

> Electronic information services for business and government use have grown rapidly in certain niches such as securities prices, economic statistics, legal information, patents and bibliographic and abstract services. However, it remains to be seen how many additional applications there are where business demand for external information can be met most effectively by electronic means. Videotex systems such as Telidon are in competition with conventional computer terminals and with new devices such as the Displayphone as a means of displaying such electronic information for business.
>
> There is the possibility of a massive home market for videotex if hardware and usage costs can be made low enough, and if sufficiently attractive applications can be found. The best prospects seem to lie in tele-banking or tele-shopping applications, since field trials show little consumer interest in information retrieval systems. However, we remain to be convinced that either Telidon or its competitors will achieve widespread home use within this decade.

Against such a forecast we can put the hundreds of millions of dollars being spent on videotex systems in the United States by major corporations and groups of corporations, which seem likely to result in considerable-spread, if not "widespread", videotex in the 1980s. But let us

continue the debate over this and other aspects of telematics in separate discussions of each of the major project areas in the DOC's telematics spectrum: Telidon, Office Communications Systems, and Government Telecommunications.

Telidon: Videotex über alles

In my interviews in the DOC I asked one of those responsible for part of the Telidon program, "What is Telidon?" He replied, "Telidon is one a myth, two a system, three a terminal, four a coding mechanism, and five an industrial policy." From this chameleon-like definition, we might go on to describe Telidon as any policy, program, or project, in the public or private sector or both, that contributes to the concept or reality of making the capabilities of telematics available to the general public.

Such a description comes fairly close to what the assistant deputy minister of communications for research, Douglas Parkhill, wrote in his 1966 book, The Challenge of the Computer Utility:

> Today, as we cross the threshold of the third generation, the anonymity of the computer is about to disappear, for it now appears likely that the coming era will carry to fulfilment a gigantic revolution in the generation and distribution of computer power. Before that revolution has run its course, the computer will have become as much a part of our daily lives as is the telephone of today, and our society will probably have been altered almost beyond recognition. It is the theme of this book that the moving force behind this revolution will be the perfection and rapid growth of the public tele-data processing system or computer public utility.

Quoting himself in a Toronto speech in 1981, Mr. Parkhill said that "Telidon seems destined to make the dream come true". If it did, it would enable Canada to meet the challenge of the information revolution and create "a new, multi-faceted, world scale, high technology industry in this country".

A couple of quotations from the 1966 book give a sense of the idea behind the computer utility:

> That governments will play an increasingly important and probably dominant role in the computer utility field seems obvious. As we have seen, there is not a single aspect of a nation's economic, intellectual, or political life that will not ultimately be transformed by such utilities so that any national government which left their development to chance would be inviting disaster (p. 182).
>
> Finally, there is an urgent need for exhaustive study and analysis of the economic and social aspects of computer utilities and of the changes that their introduction is likely to produce in our society. Here, of course, the subject of the computer utility broadens and merges with the myriad other challenges that are endemic to our modern society -- the promise and threat of automation, the struggle for racial and social justice, and finally, the problem of survival in a divided and nuclear-armed world (p. 182).

The idea, then, was not just the technological idea that later became known as videotex (making remote databases accessible on the home screen), but also a political ideal for making videotex and computer-power serve the public weal. To the extent possible, there would be no information-rich and information-poor; all could be connected.

The first partial, or one-way, realization of the idea came in Britain in 1974 with the teletext services, CEEFAX and ORACLE, of the BBC

and ITV television networks, respectively. A decoding device fitted to a TV set enabled viewers to grab frames of screenprint news information (text and crude graphics) which were constantly broadcast in the vertical blanking interval of the TV signal. Britain again pioneered in 1978 when the Post Office offered a videotex utility, in the form of Prestel, a two-way facility using the telephone network. It made a database of scores of thousands of pages of varied information available on TV sets equipped with a conversion unit (modem) and keypad.

At the same time, the British were pressing sales of the Prestel-associated "Viewdata" equipment and software abroad and it was being considered for use in Canada. But since the 1960s researchers in this country, first under the aegis of the Defence Research Board, then under the Communications Research Centre, with assistance from the Defence Department, had been working toward their own tele-data technique. Years of work had produced their third set of PDIs, or Picture Description Instructions, to tell a computer how to assemble the elements of a graphic image on a television screen (RCN research, vol. 8, pp. 45, 46). This was the "better mousetrap" that was hastily demonstrated to a new deputy minister of communications, Bernard Ostry, in face of the British competition, and that was rushed to public presentation under Communications Minister Jeanne Sauvé, almost immediately establishing Canada as one of the world leaders in videotex technique. Meanwhile, an earlier (1976) technology transfer from CRC to Norpak Ltd. for the development and sale of commercial graphics terminals had already given what was to be called Telidon part of its industrial base.

But what about the idea of a "public utility"? The Prestel experience was discouraging. Customers were hard to find outside the business world. The real development of screenprint appeared to be in online services from a developing array of specialized databases to personal computers in office and home. The period was characterized by ever more powerful microprocessing capacities at low prices and a building-block approach to the market -- users could build their hardware and sofware capacity according to the degree of sophistication they wanted (and could pay for) in stand-alone, interactive, and display capacities. Consumer markets more general than business, industrial, and professional use were developing mainly in education and entertainment (games). The idea of a telephone-based system was giving way to the idea of using whatever means might suit particular purposes -- telephone, cable, radiowave systems or any combination, with fibre optics as a new form of transmission to complicate or facilitate matters according to your point of view.

Tele-banking, tele-shopping, tele-metering, tele-alert systems through a computer utility linking all homes appeared to be well in the future. And trials in Canada indicated, as Prestel had in Britain, that retrieval of general information through a screenprint service, videotex or online, was low in consumer priorities.

Harking back to the von Baeyer task force's warning about solutions looking for problems, and its view that the consumer market would gradually develop as a kind of spin-off from the business market (a view repeated in the Price Waterhouse report), many people inside and outside government have become extremely critical of the Telidon program. They feel

its myriad of individual projects and programs are too closely tied to the myth and the system, the idea of an everyone-to-everyone computer utility. They speak of Telidon's being "technology-driven" when it should be "market-driven"; but, as noted earlier, Telidon is not just a technological idea, it is a political idea, an idea about technology serving the public weal, so perhaps the basic complaint is that it is ideology-driven. The approach from which the criticism emanates is illustrated in Tracy Kidder's book, The Soul of a New Machine, in the following excerpt, (Kidder, p. 119) in which Kidder describes how Tom West, the project manager, looked at the work of designing and building a new computer called Eagle:

> On the Magic Marker board in his office, West wrote the following:
>
> Not Everything Worth Doing is Worth Doing Well.
>
> Asked for a translation, he smiled and said, "If you can do a quick-and-dirty job and it works, do it." Worry, in other words, about how Eagle will look to a prospective buyer; make it an inexpensive but powerful machine and don't worry what it'll look like to the technology bigots when they peek inside. West espoused these principles of computer design: "There's a whole lot of things you've gotta do to make a successful product. The technological challenge is one thing, but you can win there and still have a disaster. You gotta give 'em guidelines so that if they follow them they're gonna be a success. 'Do ABC and D without getting the color of the front bezel mixed up in it.'" Another precept was "No bells and whistles." And a third: "You tell a guy to do this and fit it all on one board, and I don't want to hear from him until he knows how to do it."
>
> West reviewed all of the designs. Sometimes he slashed out features that the designers felt were useful and nice. He seemed consistently to underestimate the subtlety of what they were trying to do. All that a junior designer was likely to hear from him was "It's right," "It's wrong," or "No, there isn't time."

> To some the design reviews seemed harsh and arbitrary and often technicallly shortsighted. Later on, though, one (member of the team) would concede that the managers had probably known something he hadn't yet learned: that there's no such thing as a perfect design. Most experienced computer engineers I talked to agreed that absorbing this simple lesson constitutes the first step in learning how to get machines out the door. Often, they said, it is the most talented engineers who have the hardest time learning when to stop striving for perfection. West was the voice from the cave, supplying that information: "Okay. It's right. Ship it."

The view that Telidon is a matter of trying to impose a system rather than let it grow from market-ready piece to market-ready piece, is often combined with the criticism that the program has drained DOC's other resources and encroached upon the responsiblities of other departments of government, particularly the Industry section (formerly in Industry, Trade and Commerce, now in Regional and Industrial Expansion).

"Parts of DOC will tell you this is the way we should go -- all we have to do is change every piece of equipment in the country," said one executive in the private sector in an interview. "Canada has had satellites up and can't develop them. They've spent their money instead on Telidon, an intellectual tour de force, a joke. DOC has seen it as the answer to all its prayers. It gets the department recognition. It has used it as a springboard into the world to the exclusion of almost everything else. In Canada we're always trying to get the perfect answer instead of the workable answer."

In an interview in DRIE, a senior official said, "For a period the DOC was very aggressive when they thought our department was not as creative as it should have been, and they were probably right. It is very

difficult to draw the line. The DOC starts with the technology of the system and works towards industry. We start from the Canadian industrial base, its strengths and weaknesses." His view was that the DOC was a "department of technicians" producing "bits and pieces of policy that are not subjected to friendly criticism within the department", let alone with other interested departments and with provincial departments engaged in the same field. In federal-provincial relations, he said, the tendency in the Telidon program had been to announce new projects, then call for cooperation, rather than consult the provinces on what might be the most appropriate projects. In its industrial policy connected with Telidon, the DOC had often reached far into the competence of DRIE before calling for help because it was out of its depth.

Several of my interviews in private industry confirmed a preference for dealing with DRIE, rather than DOC, on down-to-earth matters of industrial development. But that is not to say that there was rejection of the ideas coming out of DOC; on the contrary, many in industry thought they were good ideas but that implementation was another matter.

"Telidon was a trivial protocol," said one senior executive in industry. "But Parkhill wanted to do far more than footle around in a laboratory. He was trying to create an industry, making an honest attempt to do something for Canada. He stuck his neck out. He's doing it in isolation."

A different view -- of convergence rather than clash -- between videotex systems such as Telidon and online personal computer systems, is

given in a June 1982 paper, "Home Computing/Videotex: A North American Perspective", by James Feeley who, as director general of informatics applications management, is a senior official in the Telidon program. He says:

> Videotex is fusing with home computing and business computing. The resulting alloys will be stronger, more useful, and more profitable than the original constituents. The enormous energy being released by this fusion will be felt around the globe for decades. The impact (commercially, socially, and individually) will be as beneficial and as disruptive as the impact of the printing press.

Setting aside personal computers used in the office, Feeley gives the following figures from American sources (LINK) to illustrate the way in which videotex will catch up with home computers:

	1982	1989
Home computers	325,000	3,300,000
Home videotex terminals	4,000	4,410,000

He says that if, in the shorter term, the videotex service industry wants return on investment, "it should cultivate the home computing base. With such a base advertisers enter the picture, and without advertising the industry is still-born."

One of the problems here is that the home computer databases are formatted to have twice as many characters to the line, and a few more lines to the page, than can be handled on the standard television screen adapted to receive Telidon text and graphics. The means exist to convert online database to Telidon. The text is simply elongated and takes more frames to

present, but tables using the full horizontal character capacity of the personal computer break up.

Videotex systems using TV sets get about 100 words a page onto the screen. Personal computers more than double that, handling about the same wordage as a standard double-spaced sheet of office paper. The problem relates to display technology which has so far run far behind developments in transmission and computer technology. Once a high-definition, flat, portable TV screen is available for any kind of reception, we are into a new ball-game, or at least a new innings. In 1971, Instant World predicted (p. 123), "Cathode-ray tubes will be improved, and perhaps replaced around 1980 by flat solid-state screens giving larger color or black-and-white pictures." Alas, no such luck, although it must be noted that Parkhill will preside this fall at an international colloquium in Ottawa on high-definition television; the display-technology reseach that could transform the outlook in market demand for videotex is well under way. But that is a personal opinion; an interviewee in the phone business told me, "There is no indication that people are willing to pay for higher quality than teletype display."

Meanwhile, Telidon is no longer the Telidon PDIs of 1978 but an enhanced standard formulated by AT and T (after consultation with the Canadian originators), agreed between standards bodies in the U.S. and Canada, and adopted by the American National Standards Institute in September 1982 under the name North American Presentation Level Protocol Syntax. The Telidon program marches on with its research, field trials, evaluations, industrial assistance, intergovernmental cooperation, and

market promotion in public-sector Telidon, private-sector Telidon, voluntary-sector Telidon; photo-Telidon, audio-Telidon, shared-visual-space Telidon; teletext-Telidon, interactive-Telidon, home-computer-compatible Telidon; telephone-Telidon, cable-Telidon, hybrid Telidon, and so on.

In response to the broad criticisms of the Telidon concept, it can be said, especially now that major carriage, content, and manufacturing companies in the United States are investing so heavily in videotex, that Canada has to act at the national level, as the European nations and Japan have done, if it wants to carve out a place for itself. With its small market and limited industrial capacity, it risks being swamped by imported hardware, software, and content, while at the same time being unable to compete abroad in any niche of the new telematics sector. As the studies at the inception of the DOC indicated, Canada appeared unlikely to be able to find a place in the production of mainframe computers, but the way lay more open in applications and software, and a place had to be assured for Canadian content. The push of the Telidon concept has been in these directions and in the direction of securing Canada a place in the telematics world beyond its borders.

It would be less easy to respond, on the basis of my research inside and outside government, to the more detailed criticism. The program has been forced ahead without bringing in indispensable participants; it has run against the grain of telematics, which is an integrative technology and can therefore only be seen as an imposition unless it is introduced cooperatively. The Telidon program, as conducted, has put too heavy a strain on the resources available to it, notably drying up its own research

capacity for some years while research resources went into industrial promotion. The Telidon program has produced a desperate fill-the-tube approach toward content which in many cases has palled on consumers once the novelty has worn off. Yet one can see why, in the midst of a great cumbersome bureaucracy, and in a country going through an ornery period of enervating procedural wrangles over the constitution, things happened the way they did. Maybe someone had to stick his neck out if anything at all were to be done.

Office Communication Systems Program

The OSC Program is another project emphasizing the role of the DOC in industrial development. The program, running from 1980 to 1985, is administered by the DOC with support from DRIE. It is succintly described in a DOC booklet, The Electronic Office in Canada. It is designed (The Electronic, p. 1):

> to develop a Canadian industrial capability for research, development and manufacturing of integrated electronic office systems, and to develop services and marketing for these, domestically and internationally.

The government was spurred to action by "an alarming fall in the productivity growth rate of Canadian labor, and because the trade deficit in this electronic office industry could reach $20 billion by 1990". The office automation market is dominated by multinationals such as IBM, Xerox, Wang and Digital Equipment. Barriers to entry are very high and include high research and development costs, difficult access to large international

markets, product differentiation, economies of scale and vertical integration. The trade situation is summarized thus (The Electronic, p. 7):

> The trade statistics for the Canadian office equipment industry show that the industry has performed poorly. In 1980, the domestic market totalled $2.03 billion growing 39 per cent in 1979-80 alone. In contrast, imports grew 43 per cent and constituted 96 per cent of the domestic market. The trade deficit grew 69 per cent in that year. Should these trends continue, this trade deficit will reach $5 billion in 1985 and $12 billion in 1990. This deficit would be a severe blow to Canada's employment picture and the strength of the Canadian dollar.
>
> There is, however, some hope. The emerging integrated electronic office market requires strength in at least four distinct but converging technologies: telecommunications, word processing, software applications and data processing. Canadian companies such as Northern Telecom, Mitel and Gandalf have been successful in developing and penetrating international markets. AES Data and Micom have captured about 15 per cent of the North American market for word processors. Systemhouse is a successful world-scale software applications and systems company. Nabu, a newly formed, Ottawa-based company, has moved rapidly in micro-computer-based office systems in Canada. Our country also enjoys a strong presence in telecommunications semiconductor production. Canadian companies are currently strengthening their position in data processing and integrated systems.

As in the home screenprint market, the surge of the microcomputer has been important in escalating the possibilities of the electronic office. It has also made Canadian interests look more optimistically on the possibility of computer manufacture in Canada after the earlier period in which this area was conceded to foreign producers.

The OCS Program was set up in two phases, the first a learning phase including social and behavioral research, the second a field-trial phase "in selected federal departments which are prepared to embrace office automation as a strategic management commitment over the next several

years". As of May 1982, four proposals for field trials had been given preliminary approval by DOC:

1. Bell-Northern Research, with Bell Canada and Northern Telecom, using the Datapac packet-switching service, the iNET intelligent gateway, the Vista videotex system, the Envoy 100 public message service and the Displayphone (an executive work station), all of which were developed and marketed by the Bell system.

2. Office Communications Research Associates (OCRA), which embodies the concept put forward in several studies of encouraging Canadian companies to join together in order to attain the scale and variety of operation needed to compete in Canada and abroad. The OCRA consortium includes Mitel, Nabu Manufacturing (itself a melding of several separate companies), Gandalf Data, CNCP Telecommunications, three cable companies (Skyline Cablevision, Ottawa Cablevision and Télécâble Laurentien) and the Cable Telecommunications Research Institute. OCRA would use coaxial cable for broadband LANs (Local Access Networks) and the CNCP microwave network or Telesat satellite facilities for inter-city transmission.

3. Systemhouse, associated with AES Data, Mitel, Canstar, and Officesmiths. The plan is to integrate special software applications in workstations with local access networks, data processing, and private and public communications.

4. Officesmiths: plan to develop "electronic filing cabinet" and an automated business manuals management system.

The DOC booklet says that "a field trial of advanced electronic office systems to meet the office automation requirements of senior managers has been proposed for the Department of Communications. The field trial will involve development of office automation tools for professional and executive personnel. It will address budgeting, management of correspondence, messaging and communications activities in the department and its regional offices."

This last proposal appears to be of critical importance. In my travels through the DOC ten years after the completion of the Telecommission studies, and nine years after the Green Papers, I saw little evidence that the "focal point" of the information society in government had done much, beyond a smattering of stand-alone word processors, to incorporate the information age into its operations. This is, however, only a superficial impression. But if DOC aspires to a leadership role, it will have to be the first to practice what it preaches and provide a demonstration effect for the whole government.

The extent of my background knowledge and interviewing were too limited to provide a great deal of balanced and useful commentary on the OCS Program in relation to trends and issues in this field. People with whom I spoke in both industry and government felt the program was well conceived but rather late in coming, given the clear indications in the von Baeyer report of where stimulation was needed. But there were criticisms, some quite bitter, of the implementation of the program, again -- as in Telidon -- related to the competence of the DOC to direct the primarily industrial, as distinct from research and design, aspects of

programs. The BNR project appeared to be going forward without undue problems, as might be expected from the integrated corporate strength behind it. But participants in the consortium had a different story. This is a critical problem since the key objective of the program is to upgrade Canadian design, manufacturing and marketing capaccity in office systems.

A DRIE representative characterized the early relationship between the DOC and DRIE on the project as "messy". He said the natural tendency would be that "as the program gets further down the road it becomes more a responsibility of DRIE".

A senior executive in one of the companies said, "It should be decided whether we're in the technological area of communications or not. We continually end up with cross-pollination of ITC (DRIE) and DOC. I can't see why the DOC is in the office communications business, why it's not ITC. For that matter I don't see why DOC is in Telidon at all -- standards, yes, but not industrial development."

He felt DOC was "a totally confused organization". He said the idea of the OCS Program, a good one, was to develop a Canadian system, "but it was split up into little categories and spread around. Government departments are simply using it to solve their equipment problem. Nothing is coming out of it that is a Canadian system. It has been divided up among various participants and the design concept has been lost. Look at any of the agreements, there is no commitment to further funding, there is no way

you can get a commitment. It is almost just a procurement program for government departments, taking it off the shelf and plugging it in."

He said OCRA had lost a full year while its proposal was being studied, and further time before expenditure was approved by Treasury Board.

Another industry representative complained that the bulk of the funding was going to BNR, although the original purpose of the program had been to help small and medium industry. He also criticized DOC for wanting "the ultimate in office systems" rather than "what would be good and sell". He said, "The basic concept was excellent, but they didn't have any focus, allowed it to drift, and insisted on something perfect. We are structured to sell things. They wanted to start again from scratch ... Our strength in Canada is in putting together systems, not designing from scratch."

Some of the criticisms of the DOC belong under the heading, "You can't keep all of the people happy all of the time," or, "You shouldn't be helping that other fellow, you should be helping me." But a great deal of it relates to confusion as to just what is the extent and nature of the DOC's mandate and mission in industrial development.

Government Telecommunications

The government's role as the preponderant user of telematics in the country is important in three ways: for improving the efficiency and productivity of government services; for demonstrating the effectiveness of telematics systems; and for stimulating Canadian industry through procurement. The DOC

is the department responsible for the Government Telecommunications Agency, and the department required to "plan and coordinate telecommunication services for departments, branches and agencies of the Government of Canada".

Owing to the extent of these responsibilities, if fully realized, one might expect them to fall under a distinct sector of the department. Such a sector might be expected also to include the more operational responsibilities for telematics which have overstrained, and distorted the role of, the research sector. Such is not the case, however, since the government telecommunications responsibility is thrown together with spectrum management, a logical enough combination in the days when communications meant transmission but perhaps less logical in the days when it means telematics.

In any case, the Annual Review of Telecommunications in the Government of Canada -- the review for 1980-1981 is the main reference here -- is produced by GTA and rates special mention as a readable, well-organized exercise in relating government telecommunications policies to the broad picture of technological advance, trends, and issues in communication. The latest review, dated December 16, 1981, had to report, however, as did the previous year's, that telecommunications planning by departments and agencies is, for the most part, lagging.

Despite the existence of government guidelines, the 1980-81 review leaves the impression that an extraordinary degree of "voluntariness" characterizes the approach of many departments and agencies toward their

telematics services. Certainly they appear to have little sense of the national urgency, in terms of jobs, productivity, and innovative technological and industrial capacity, that attaches to their telecommunications planning. The review states (Appendix 1, p. 21):

> The 1979 Report of the Auditor General found that information was not being maintained within departments for effective management of telecommunications. Specifically, departments had not: gathered the information on their needs and utilization for proper planning, monitoring and control; developed cost accounting systems; nor adequately coordinated the planning, utilization and evaluation of telecommunications services. The Auditor General also found that annual reports produced for Treasury Board were often inadequate or incomplete because information on systems and costs could not be readily verified or gathered from departmental records.

On page 22 of the same appendix, the review noted that the Department of Communications and the Government Telecommunications Agency have "the responsibility of assisting departments in their management of telecommunications".

> They are also responsible for ensuring that the development and administration of telecommunications services safeguard, enrich and strengthen the cultural, political, social and economic fabric of Canada.
>
> These dual responsibilities must be undertaken in support of the government-wide telecommunications planning process. To this end, DOC/GTA must assist departments in fulfilling their responsibilities to ensure that adequate information is provided in return to support government-wide planning.
>
> The Auditor General's report found that DOC had not carried out its legislative responsibility to plan and co-ordinate telecommunications services for departments and agencies.

To remedy the situations outlined above, objectives were proposed in the 1980-81 review to "obtain the minimum evolution required during this

decade to keep pace with office communications systems being developed in the private sector (Annual Review 81-82, p. 4)". The latest review continues:

> The target proposed for 1985 was the automation of key business functions in at least five major departments and the linking of these departmental systems in a network. For 1990 it was proposed that major business functions be automated throughout the federal government and all departments linked in a network to each other, provincial governments and businesses. (...)
>
> It is gratifying to be able to report that Telecommunications Coordinators and other members of the federal government telecommunications community welcomed this approach ... and urged the Department of Communications to proceed with the strategy.

At the same time, however, DOC found that "very few departments had yet established organizations capable of acting on the planning guidelines provided". One basic problem, I was told in an interview, was that departments tended to have a segmented administration of telematics: one group is in charge of electronic data processing, a telecommunications officer is in charge of "communication"; and an administrative officer is in charge of office equipment. Once again, compartmentalization runs against the integrative grain of the technology.

The new urgency in the GTA program, however, may help explain the complaint of the industrialist in the OCRA consortium who said departments were using the OCS program to grab equipment off the shelf and plug it in.

The GTA review strikes a cautioning note (p. 40) about new office communications products:

> Some progress has been made during the past year in bringing to the market office communications products which meet real user needs, but in general it is still the manufacturer who decides what will be offered. Inadequate consultation with users has resulted in uninspired systems which frustrate, rather than facilitate, office work. Office automation products will continue to fall short of the ideal for another few years, until the user community has enough practical experience in analyzing office work to specify in detail what it wants.
>
> Speeding up the learning process for both user and vendor is the intent of the federal Office Communications Systems (OCS) Program.

The review observes that a great deal of new equipment is coming on to the market, facilitated by the CRTC attachment decision. It advises (p. 43):

> The sensible approach is to recognize that what is available now is a fraction of what will be available in a few years, and to meet existing needs with products which can be integrated into a comprehensive office communications system over time.

The review also notes that the Access to Information legislation recently adopted by Parliament will pose a major new strain on government communications systems.

Some issues

CRTC: The role of the Canadian Radio-television and Telecommunications Commission will come up for more discussion in later chapters. But some aspects of its authority touch directly on the aspects of telematics considered here.

The GTA review for 1980-1981 notes (p. 8):

> New telecommunications legislation is planned at the federal level to set broad objectives for the nation's telecommunications systems, define the relationship between its parts and deal with issues raised by the revolution in communications technology. In the absence of up to date legislation, policy has tended to be established by regulatory decisions of the CRTC.

In general, recent CRTC decisions have favored competition, allowing the attachment of independently supplied terminal equipment meeting certain standards (in areas where the CRTC has jurisdiction), and the interconnection of CNCP with Bell and, later, B.C. Tel. Such decisions, however welcome, point up the anomaly of a national regulatory body having only limited control of national communications since its rulings do not apply to telephone companies under provincial jurisdiction.

The CRTC, where it regulates phone companies, regulates them as carriers and has no authority over the content they carry. Thus screenprint content carried to personal computers or Telidon-type terminals by telephone enjoys normal freedom of the press. But cable companies are regulated as "broadcasting receiving undertakings" and the videotex services they may offer come under the CRTC's regulatory and supervisory authority in broadcasting. The CRTC can, and does, forbid them from carrying advertising, though telephone systems are of course free to do so. The CRTC also has to approve new cable services, enjoying thereby the authority to hinder videotex from developing at the same rate as in the United States. The policy on advertising clashes with that of the Telidon program, which is oriented to providing screenprint "free" to users; that is, users pay for it through their taxes, charitable contributions, or the percentage of the purchase

price of goods and services that goes into advertising, but never directly for particular content received. Why this should be considered a superior way to serve the public, despite the Clyne committee's strong recommendation in favor of making available pay-per-program cable service, is not clear. In any case, these instances serve to illustrate the CRTC's power to favor one medium over another in certain services, or one type of service over another.

One DOC official told me, "If you look at the reality of the consumer society, you're taking a moral stance if you say the user should pay." But leave aside the question of whether we live in a consumer society, information society, technological society, or whatever. How can it be contended that government-pay, advertiser-pay, or charity-pay are somehow "neutral" while consumer-pay raises a moral issue? The issue is one of consumer choice and the degree to which governments and regulators think they have the right to guide choice.

Competition: Not all issues of competition policy relate to the CRTC, but fall, rather, under general competition policy and the Combines Act. Successive studies have raised the question of whether, in order to compete abroad and defend a base for Canadian industry against foreign competition, it would be wise to condone a degree of concentration that would otherwise be considered undesirable. On the one hand, the government's Restrictive Trade Practices Commission conducted an almost interminable pursuit of Bell Canada for its control of Northern Telecom, the two companies together controlling Bell Northern Research. On the other hand, the government industrial policy, including the OCS program, sees the association of Bell

and its affiliataes, -- which shrinks to relative modesty in competition with U.S. conglomerates -- as a mainstay of Canadian high tech. At the same time, the CRTC attachment and interconnect decisions have opened the Bell group as carriers and manufacturers to greater competition. The Clyne committee had this to say (Telecommunications, p. 68):

> Many of the smaller firms in the Telecommunications subsector assert that the corporate relationship of Northern Telecom with Bell Canada constitutes unfair competition. Nevertherless, the dominant position of Northern Telecom in the relatively small Canadian market tends to discourage the establishment of branch plants by the multinationals, and may thus be acting as an umbrella for a number of small, Canadian-owned, high-technology manufacturers. The Restrictive Trade Practices Commission is at present conducting an enquiry into the telecommunications supply industry in Canada; should the commission recommend that Bell Canada divest itself of effective ownership of Northern Telecom so as to promote more competition in the subsector, there is a strong probability that, because of the peculiar structure of the industry in Canada, most of the competition would be provided by foreign interests. Experience in many countries has demonstrated the advantages of vertical integration in this field, and the Committee is of the opinion that the Bell/Northern Telecom complex is of striking advantage for Canada and an essential base for any kind of Canadian technological sovereignty.

The broad issue of competition policy is not primarily a matter of communications planning and policy; but it is an issue on which the DOC might be expected to provide an input on the basis of its knowledge when the telematics industry is involved.

Industrial policy: In How Ottawa Decides, which is rather largely an account of how Ottawa didn't decide, Richard French outlines how the government retreated from the idea of a comprehensive "industrial strategy" for

Canada to "a coherent set of industrial policies". Relating the issue to the evolution of the Department of Industry, Trade and Commerce, he writes:

> Whatever the theoretical merits of the decision to merge Industry with Trade and Commerce, the resulting Department was to become one of the most unwieldy and unstable bureaucracies in Ottawa. The 1968 reorganization was followed by others at regular intervals over the decade. (...)
>
> On the industrial side, the Department was structured into vertical units known as line branches, each responsible for assistance to a particular industry sector: chemicals, textiles, electrical and electronics, machinery, resource industries, etc. While this sectoral structure was the logical means for program delivery, since it simplified contact with the industry immensely, it also dominated the industrial side of the Department to the extent that the rapidly growing promotion and incentive programs of the early Seventies entirely escaped any horizontal policy co-ordination.

Horizontal co-ordination and planning were what computer/communications and von Baeyer's focal point were all about. They were also what the conflicting central planning systems of government, described by French (see chapter 1), were all about. The later 1970s produced more coherence in IT and C, and a reordering of central authority into cabinet policy committees and attendant secretariats handling policy "envelopes". But it remained true that IT and C and the Finance Department envisaged a less interventionist and targetted role for government in the economy than many at the centre of government and in particular departments, such as the DOC, which saw themselves as sharing the industrial-policy mandate.

The record of DOC policies and projects outlined in this chapter indicates that the idea of horizontalism -- inherent in telematics itself, propounded by the von Baeyer task force in its concept of a focal point for

shared responsibilities -- has been only very imperfectly realized both within the DOC and between it and the people with whom it must do business.

III. CULTURE

Introduction: a new planning exercise

Just as the government undertook the planning of the Department of Communications itself through a process of inquiry and recommendation, so the broadening of the department to include the Arts and Culture sector led to the appointment, in 1980, of the Federal Cultural Policy Review Committee.

The report of this task force, known as the Applebaum-Hébert Committee after its co-chairmen, Louis Applebaum and Jacques Hébert, was not yet available at the time of writing this report. But it will soon become public and shortly thereafter the Minister of Communications intends to sponsor proposals for acting on its recommendations.

The report itself will provide a mass of valuable information for the planning advisory function. Any new policies, programs, and organizational structure will create a firmer frame of reference for planners. Several people in government who were interviewed for this report noted that no "rationale" or "cabinet document" had ever been published to underpin the transfer of the Arts and Culture sector from the Secretary of State's Department to the DOC.

In view of the planning exercise which is now nearing completion, no extensive review of the DOC's role in cultural policy planning will be undertaken here. Rather, I will review briefly some basic issues that have

been raised about the associating of governmental responsibilities for culture and communications in a single department.

Culture and communication

The basic cultural and communications rights of Canadians, "subject only to such reasonable limits prescribed by law as can be demonstrably justified in a free and democratic society," are set out in the Charter of Rights and Freedoms of the Constitution Act, 1982. Section 2 declares, under the heading Fundamental Rights and Freedoms:

> Everyone has the following fundamental freedoms:
>
> (a) freedom of conscience and religion;
>
> (b) freedom of thought, belief, opinion and expression, including freedom of the press and other means of communications (emphasis added);
>
> (c) freedom of peaceful assembly; and
>
> (d) freedom of association.

The "right to communicate" put forward by Instant World (see chapter 1) relates to this section, especially with the addition of the words "and other means of communication" to the traditional formulation. Instant World also noted the ways in which "assembly" and "association" are accommodated by the new communications technology.

Under the Constitution, then, cultural and communication policies of any order of government in Canada must embody the fundamental freedoms "subject only to such reasonable limits prescribed by law as can be demonstrably justified in a free and democratic society", as provided in Section 1 of the Charter. It is not just governments, of course, that are stayed from encroaching on fundamental freedoms; everyone is. Thus governments and everybody else are put in the position of being able to affirm but not inhibit, enhance but not diminish, the fundamental freedoms of conscience, religion, thought, belief, opinion, expression, peaceful assembly, and association.

Within this broad context, the administrative guideline for the association of culture and communication in the DOC is contained in the Introduction of the Strategic Overview of the department, March 31, 1982, issued by the Minister, Francis Fox, under the sub-heading "an integrated framework for culture and communications" (p. 2):

> When the Prime Minister transferred responsibility for the federal government's arts and culture program to the Department of Communications, he asked me to ensure
>
> - that communications policy is conducted with the highest concern for cultural content and the cultural implications of communications technology, and
>
> - that the cultural community is sensitive to and aware of the importance and rapidity of technological progress in the communications field.

Discussion of the appropriateness of putting culture and communications together in one department involve three possibilities:

1. The combination is a matter of administrative convenience. The government of the day has several options as to how to organize the public administration. It may want a large number of departments, organized in so far as possible on functional lines. Or it may want fewer departments, each bringing together a related range of functions. It may want a two-tier structure of overseeing departments grouping junior departments under them. Or it may want some other structure; it depends on how the Prime Minister wishes to organize his cabinet and dispose of the talents he has available to him in the particular circumstances. Culture and communications could be together, or both could be parts of a larger social affairs department, or one could be with the Secretary of State, and the other with Industry or Transport, or any other permutation or combination.

2. The combination is a matter of subjecting cultural policy to communications technology and objectives. Greater diffusion of Canadian culture, or particular types of Canadian culture, or regional expressions of Canadian culture, or French or English or indigenous-group or ethnic-group expressions of Canadian culture, may be sought; and the government, through DOC and CRTC authority may be in a position to bring this about. Or the government may want to make cultural activities in Canada more responsive to industrial and economic development policies pursued by the DOC and CRTC. Or it may want to make cultural activity more compatible with new technology. Art for telematics' sake.

3. The combination is a matter of subjecting communications policy to cultural objectives. Technological, economic, industrial, social, and international promotional activities of the DOC and the CRTC

would all be subjected to cultural criteria. Innovation, job creation, aid to industry and so on would all have to contribute to Canadian cultural sovereignty or freedom or regionalism, depending on the prescription of the government of the day. Telematics for art's sake.

Each option has been simplistically drawn here to illustrate points of view in the debate: for instance, option one may be viewed as neutral, while either option two or option three involves undue functional-push by one sector against the other, both being potentially more destructive of cultural freedoms than of the more utilitarian concerns of "communications".

The Prime Minister's guideline in the Strategic Overview would appear to support the "neutral" option; that is, a balance of interest is struck between culture and communications where mutual interests exist, but the guideline does not support the notion of "an integrated framework" for the entire area covered by communications and culture or any idea that one should be subjected to the other. A number of critics doubt, however, that either culture or communication is enjoying the degree of functional discreteness, or autonomy, it should within the Department of Communications.

One executive in the communications business said in an interview for this report, "Juneau is proposing to take money away from existing sectors to give to the cultural departments." His reference was to Pierre Juneau, former Deputy Minister of Communications, who recently became President of the Canadian Broadcasting Corporation. Another commu-

nications business executive said, "A DOC that preoccupies itself with things cultural is not advantageous to industry."

On the other side of the argument, an official in the cultural side of the department said of the "utilitarian" side: "They're only interested in us if we're pluggable-innable." An official in a central agency said the utilitarian side of the DOC did not take into account the arts and culture interest in policies the DOC put forward: "What do you do with excess satellite communications capacity? One side of DOC is game for anything that makes money. The other is concerned about national identity."

Surveying the issue, one sometimes felt as if one were in the middle of "Julia's Dilemma", the title of John Madden's first chapter in Gutenberg Two, in which the world is a tug-of-war between technologists and humanitarians. How has the battle been going?

Cold shivers were sent down the spines of the humanitarians by the picture they saw of the new communications as a kind of cultural mix-master in the "bright" Green Paper of 1973 (see chapter 1). That paper said (p. 3):

> In the very broadest terms, the objectives of Canadian communications policy, in which broadcasting policy plays a significant part, should be to:
>
> - safeguard, enrich, and strengthen the cultural, political, social and economic fabric of Canada;

- contribute to the flow and exchange of regional and cultural and social values;

- contribute to the development of national unity; and

- facilitate the orderly development of telecommunications in Canada, and the provision of efficient and economical systems and services at just and reasonable rates.

The last-mentioned objective appeared to be simply the pursuit of the principle of "the right to communicate". But the others, if culture were to be combined with the Department of Communications -- the Green Paper itself was silent on that question -- seemed to involve bending cultural policy, and intruding on cultural freedom and independence, in order to pursue communications objectives. This sense was heightened by the Green Paper's observation (p. 4) that "it is clear that the technological and economic aspects of communications are intimately related with their social and cultural implications", and by the statement that (p. 9):

> A positive and highly organized commitment needs to be made by the whole country ... to effect a vast increase in Canadian capacity to create, produce, and promote cultural, informational, and educational material, of the highest possible quality, to be made available through telecommunications systems.

The degree of governmental dirigisme in the cultural life of the country, and the extent to which that dirigisme would be tied to communications technology, caused considerable disquiet. After some rounds of federal-provincial consultation, the federal government in 1975 brought out a White Paper, Communications: Some Federal Proposals, which was notably more subdued on the cultural side. It viewed national communication

policy, in which both the federal and provincial government would participate according to appropriate functional jurisdictions, as more a matter of assuring access to communications than as the content of communications.

Where are we now?

With the Applebaum-Hébert exercise still under way, the Strategic Overview of March 31, 1982, gives the latest DOC view of the culture-communications relationship. It is not an encouraging one for those who fear the mixmaster approach.

The Overview regards communications and culture as "an increasingly unified field". Information and cultural content, it says, have been drawn into electronic means of creating, storing, distributing and displaying "at an exponential rate" in the past five to ten years.

"Convergence" has occurred because the means of communication are no longer technologically distinct. At the same time, both economic and social forces "tend to drive the electronic media in the direction of integrated and universally accessible networks". Technological integration has fostered "the vertical and horizontal integration of organizations". And --

> This latter development both reflects and supports another integrating trend -- the rapidly increasing tendency of cultural content to cycle through a number of media in order to capture the widest possible market. The same content may appear as a play, a movie, a videocassette, a videodisc, a broadcast, and book.

This picture of culture as communications processing -- as the cycling of "the same content" through different media -- is the basis in the Strategic Overview for discussing policy in the unified "communications and culture sector". This is art for telematics' sake with a vengeance.

Consider the concept of the same content cycling through various media. There are a bunch of old legends and historical chronicles at hand. You're Shakespeare. You cobble this content together into some plays. Different medium, same content. You're Laurence Oliver and you take Shakespeare plays and make them into movies. Different medium, same content. True or false?

You're Christopher Isherwood and you write a book about your times in Berlin in the twenties called I Am a Camera. You're John van Druten and you take Isherwood's book and you write a play, The Voice of the Turtle. Different medium, same content. You're whoever you were and you take this material and you make a stage musical out of it, Cabaret. Different medium, same content. Then whoever you were makes the material into a movie, Cabaret again. Different medium, same content. True or false?

Is a dance is a song is a tale is a play is a novel is a movie is a ballet is an opera is a television spectacular is a digest is a Telidon series of frames correct? Or is this an anti-intellectual, anti-cultural way of thinking about culture? What is originality, creativity, inspiration, individuality, taste, critical faculty and where do these things fit into the cycling-of-same-content doctrine?

The DOC "Overview" of the communications-culture field fulfills the worst fears of those who contend that to put culture and communications together in one department is to subject cultural policy to technological, economic and political determinants that are destructive of cultural freedom. Culture is like an oilfield whose product can be pumped, piped, refined, and delivered in whatever fluid or plastic form desired under the beneficent guidance of the DOC, a kind of National Energy Policy for culture.

Against such heavy government involvement in culture and communications, there is a Canadian tradition -- shared with some other countries -- of keeping government at "arm's length" from cultural agencies. A parallel tradition keeps it at arm's length from regulatory bodies dealing with monopoly services in transport and communications. The Canadian Radio-television and Telecommunications Commission brings together the principles of arm's length regulation and supervision of cultural activities and of arm's length regulation of common carriers in the communications field.

The Canadian Broadcasting Corporation is the prime example of a cultural agency at arm's length from government but operating under guidelines established by Parliament, embodied in legislation, and subject to some extent to regulation by the CRTC.

The Applebaum-Hébert Committee has noted in its report on briefs and hearings (Summary, p. 33):

> On one general point there was widespread agreement: that federal cultural agencies should remain at "arm's length" from the federal government. Nevertheless, except for the briefs received from the federal agencies themselves, relatively few intervenors dealt with the issue in detail. Most took the arm's length principle as a given, although some occasionally went to the trouble of expanding on their views.

The Committee added, however, that some intervenors felt the possibility of interference with culture by technocrats in the arm's length agencies could be more serious than the feared political patronage that could develop if the agencies were not at arm's length. A go-round of this debate occurred last winter when one candidate to head the Canada Council was regarded as the arm's length champion, another was regarded as the champion of a greater degree of government intervention.

What the Applebaum-Hébert Committee will make of the debate we do not know. We will take it for granted here that the arm's length principle is an admirable one, but immediately proceed to say that these agencies are acting on behalf of the people of Canada, spending the taxpayers' money, and must be subject to broad direction and control by Parliament. This means that their autonomy is exercised under guidelines laid down in legislation and may be subject to specified types of government direction; in either case the DOC is at present the department responsible for recommending whether legislation or directives need to be changed. The arm's length agencies are also subject to budgetary control, even if only on the broad "block grant" principle, and here too the policy advisors in government have their role.

By the same token, there are some powers of Parliament and Government that cannot be delegated to arm's length cultural agencies though they may be key policy instruments for affecting the areas in which those agencies operate. Taxes, tax expenditures, tariffs, postal subsidies, communications policy itself, and foreign policy instruments are examples. Canadian ownership policy for magazines and newspapers is implemented through the tax structure. A great deal of cultural activity is supported through the deductibility of charitable donations, with Revenue Canada as the regulatory authority. It appears natural to have a department of government, or a sector of a department, to bring these types of policies and programs together and see them in conjunction with the work and responsibilities of the arm's length agencies as parts of an overall cultural policy.

Thus in all the debate over cultural policy, no one can realistically advocate a "Kiss me and leave me" policy for culture.

Conclusion

Cultural policy raises difficult constitutional and administrative issues.

Within the rule of law, cultural expression and the content of communication are free of government control. Yet government is expected to provide services and facilities to enable Canadians to enjoy freedom of expression; and the means of government intervention will always be the subject of scrutiny lest they interfere, or seem to interfere, with the very freedom they are intended to enhance.

Cultural policy can be insulated to some degree from the danger of undue influence. One method is to see that it is not too closely tied to policies with other objectives, such as the promotion of communications technology. Another is to accord cultural agencies an "arm's length" relationship to government, although government responsibility to Parliament for taxing, spending, and general policy limits the extent to which this can be done.

It is suggested here that the planner can realistically view the DOC as a dualistic department, with a "communications" stream and a "culture" stream. Identifying the connections between the two should not lead to constant efforts to see them as the same stream. Often each of these streams will have closer relationships with other departments of government or distinct client groups than they will with one another within the DOC. Excessive efforts to integrate communications and cultural policies risk distorting both.

IV. BROADCASTING

Introduction: The "fabric of Canada"

The kind of all-embracing and prescriptive national cultural policy that the Department of Communications is now pursuing had its origins in the inundation of Canada by United States radio in the 1920s. The business of the Canadian broadcasting companies was chiefly in the importation of American programming. The exception was the only publicly owned corporation in the business, Canadian National Railways, which produced programming of good quality created in Canada. The result was the appointment of the Aird Royal Commission on Broadcasting in 1929 by a Liberal government, the enactment of the first Broadcasting Act in 1932 by a Conservative government, creating a publicly-owned broadcasting service and regulation of all broadcasting, and amendment of that act in 1936 by a Liberal government to provide, notably, for an arm's length relationship between government and the publicly owned service, the Canadian Broadcasting Corporation.

With the combination of regulation and public ownership in one broadcasting policy, Canada brought together the two great themes of its cultural policy: protection and subsidy. Parliament and government would "stand on guard" on the one hand, make "glorious and free" on the other. Or, as expressed in the 1968 Broadcasting Act, the purpose of the Canadian broadcasting system is "to safeguard, enrich and strengthen the cultural, political, social and economic fabric of Canada".

Two conflicting streams of Canadian thought came together in the 1920s to produce bipartisan support for this kind of broadcasting policy. On the one hand, there was the waning Tory trend under which Canadian nationalism was seen as an integral part of British imperialism (see Carl Berger, The Sense of Power: Studies in the Ideas of Canadian Imperialism, 1867--1914). On the other hand was the postwar Liberal trend to Canadian national autonomy in a formal but loose attachment to the Commonwealth and an informal but substantial arrangement with the United States. The Broadcasting Act represented the residual Canadianism shared by these two streams.

Prior to the Broadcasting Act, Canadian "cultural" policy had been more on the "strengthening" than on the "safeguarding" side. After Confederation, newspapers and periodicals, the only mass media of the day, were seen as vital to the political life of the new Dominion and suitable subjects for preferred postal rates, exemptions from tax, and even free passes on the railways for journalists. Preferential telegraph rates, and for a time a subsidy to the Canadian Press, were elements of governmental policy. The issue of protection against American cultural pressure first became a major issue in relation to periodicals (see Isaiah Litvak and Christopher Maule, Cultural Sovereignty: The Time and Reader's Digest Case in Canada). It was pursued by the Conservative Opposition in the 1920s. The R.B. Bennett Conservative government, which came to power in 1930, enacted taxes on imported magazines, according to their percentage of advertising content, in 1932. (The Liberals, scandalized by such protectionism, removed the tariff after their return to power in 1935. But 21 years later another Liberal government imposed a 20 per cent tax on the

advertising in Canadian editions of foreign magazines, only to see the successor Progressive Conservative government, scandalized by such discrimination, remove it after taking power in 1957. Eventually a tax mechanism, devised by a Conservative-appointed royal commission, implemented in successive stages by the Pearson and Trudeau Liberal ministries, was used to assure Canadian ownership, direction, and 80 per cent content, not only for Canadian magazines but newspapers as well, though in the case of newspapers the content rule is a sleeping dog that has been let lie.)

It was easier to assert a public interest in broadcasting than in print because radio frequencies were public property and scarce. A free market in ideas, the idea that underpins the right of free expression, was thus limited by nature and technology in radio broadcasting. Parliament intervened with law and policy instruments to see that the scarce frequencies were allocated in such a way as to ensure public rights over private interests. The public had to be assured that its broadcasting system would provide, in the eventual formulation of the 1968 Broadcasting Act, both "freedom of expression" and "reasonable, balanced opportunity for the expression of differing views on matters of public concern".

As the years went by, nature's gift of frequencies, man's inventiveness in finding new ways to use and channel them, and astute interpretation of the word "broadcasting" led to an extraordinary expansion in the proportion of the country's mass media spectrum that was covered by the Broadcasting Act in its successive versions. Radio went forth and multiplied until audiences were served by more radio stations than

newspapers. Television arrived and went forth and did the same, immensely helped on its way by cable -- "broadcasting receiving undertakings", as they are known to the law -- and aided also by microwave relays and, latterly, satellite relays. Then, in the 1970s, print became a broadcast medium, though it awaits the late 1980s or perhaps 1990s to become a mass medium by this new means.

The policy-makers raced to keep up, lest broadcasting -- "any radiocommunication in which the transmissions are intended for direct reception by the general public" -- should escape into closed-circuit, point-to-point communication and thereby elude the scarce-frequencies doctrine. If there were no "broadcasting receiving undertaking" somewhere in the signal's transit, it became mere telecommunications carriage. Thus in the "bright" Green Paper of 1973, as noted in chapter 1, the "safeguard, enrich" clause was promoted as a cornerstone for all communications policy. And in the consolidated telecommunications act proposed, but never passed, in 1978 (Bill C--16) it was declared that:

> (a) efficient telecommunication systems are essential to the sovereignty and integrity of Canada, and telecommunication services and production resources (emphasis added) should be developed and administered so as to safeguard, enrich and strengthen the cultural, political, social and economic of Canada.

A slightly different formulation of the doctrine appeared in the terms of reference of the Royal Commission on Newspapers in 1980. The Commission was asked to look into the consequences of concentration and reduced competition in the newspaper industry for "the political, economic, social and intellectual vitality and cohesion of the nation as a whole".

In this chapter we look into the expanding world of broadcasting policy, its application, and some of the results as assessed by different commentators.

The other department of communications

Under the Broadcasting Act, the Radio Act, and limited powers of direction given to the Cabinet, the Canadian Radio-television and Telecommunications Commission "shall regulate and supervise all aspects of the Canadian broadcasting system with a view to implementing the broadcasting policy enunciated in Section 3 of this Act".

Section 3, under the heading "Broadcasting Policy for Canada", states:

It is hereby declared that

(a) broadcasting undertakings in Canada make use of radio frequencies that are public property and such undertakings constitute a single system, herein referred to as the Canadian broadcasting system, comprising public and private elements;

(b) the Canadian broadcasting system should be effectively owned and controlled by Canadians so as to safeguard, enrich and strengthen the cultural, political, social and economic fabric of Canada;

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

The section then goes on to provide for the CBC as a "national broadcasting service", part of the aforementioned "Canadian broadcasting system", and to state that:

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

The way the CRTC carries out its mandate as that single authority can be seen through the speeches of its chairman, John Meisel, an articulate champion of the CRTC's place in Canadian society. (Meisel's speeches, identified by place and date of delivery, are available from the CRTC.)

The role of the CRTC as a nexus of Canadian nationalism is a key one for John Meisel. "I consider that all of our lives are enhanced by the preservation and encouragement of distinctiveness among individuals, groups, communites, and nations," he told the Broadcast Executive Society earlier this year (Toronto, 11 May 1982). "In this context I am convinced of the value of preserving national cultures. Not only of the value but of the possibility of doing so. I think of my own homeland, for example, and marvel at the way the special character of the Czech style and Czechoslovakia's artistic and industrial vitality have persisted in the face of repeated onslaughts from powerful neighbors and cultures."

The CRTC, through both the supervisory and regulatory role and the charges given it under the Broadcasting Act, is "playing the part of one of the articulators of a national conscience, of a moral gyroscope keeping us on an even keel" (Calgary, 29 April 1980). Such a role demands

the exertion of influence within the nation as well as protection against undue influence from without: "Blinding parochialism is stultifying and as dangerous as the unthinking acceptance of each and every available cheap foreign program" (Toronto, 11 June 1980). Nationalism involves cultivating a country's ability to function internationally: "The opportunities provided by pay television must enhance our cultural life and boost our program production industry to a position of world-class excellence."

The special nature of Canadian nationalism is to be measured against the United States: "By fostering a viable state in the face of an energetic and expansionist neighbor, a national community was deliberately developed" (Strasbourg, France, 9 September 1981). The "national telecommunications system, and the national broadcasting service" are two examples of that deliberate development. Meisel continued:

> National policies to keep Canada a culturally sovereign nation in the face of easily-imported American books, magazines, records, films, and television programs have been a central concern of Canadian authorities. There is also, naturally, considerable interest in retaining industrial benefits of communications technology for Canadians. In general, three distinct sets of instruments have been used: state ownership and support for the arts, regulation, and, in a more rudimentary way, fiscal policies.

It was clear, he told the Strasbourg audience, that "both moral and material leadership can be expected primarily from government and its agencies -- private sectors have been unable or unwilling to mount effective national defences".

Alluding to the U.S. "open skies" policy for international communication through satellites, Meisel said "an open sky policy must encompass a recognition that the value of 'free flow of information' needs to be tempered with concern for other values, such as national and cultural sovereignty, protection of employment opportunities, and so on. Use of radio frequency spectrum is a privilege, and one, moreover, which is accompanied by major social and economic responsibilities. American values, to put it most bluntly, are not necessarily appropriate to nations which have different cultures and values, and which may wish, for example, to promote a vibrant national broadcasting industry. Giants may be able to afford the luxury of a completely free flow of information; those built on a more modest scale can be destroyed by it."

In a speech to the Atlantic Association of Broadcasters (Halifax, 22 September 1981), Meisel said the Canada-U.S. agreement of 1972, which says roughly that each country should keep its own satellite system to itself in the absence of agreements for extra-territorial coverage, "may affect the future survival of Canadians as an identifiable people distinct from Americans". Meisel sounded the same theme of national survival at the opening of the pay-TV hearings in Ottawa two days later (Ottawa, 24 September 1981):

> (J)ust as man's movements in space launched him into efforts to exploit the last remaining frontier, so pay TV is for this country's broadcasting industry: the last frontier in which may be found the resources and opportunities for vigorous Canadian TV production and exhibition. And by achieving this kind of production and exhibition, we may prevent the otherwise likely annihilation of our national cultures.

Thus the preservation of the cultural health of the nation state remains a firm base for supervision and regulation of the broadcasting system. But with multiplication of frequencies and services, the old scarce-frequencies argument has receded, though the fact that radio waves are public property remains. In his speeches, Professor Meisel has been at pains to reorient the CRTC role to the new age of frequency affluence replacing the old one of scarcity, doing for broadcasting policy what Galbraith did for economics.

He acknowledges (Québec, 13 May 1981) that "The new scientific wizardry has given us vastly increased signal capacity, and, when coupled with computers, a wide range of possible interactive services." But "Implicit in the use of this technology ... is the erosion of our broadcasting system as we presently know it."

The interest of his audience, the Canadian Cable Television Association, was quite properly, he said, "the welfare of your own companies and the cable industry as a whole". On the other hand, "The Commission's goals are pre-eminently social and cultural." In this and other speeches, Meisel proposed a carrot and stick approach: the CRTC would protect the revenue base of the broadcasters -- prevent "siphoning off" of revenues by new services, as he put it at Québec; but the Commission would expect the industry to respond by trying to meet the socio-cultural objectives of the Canadian broadcasting system, and could use the stick of regulation to that purpose.

There had been calls for "deregulation", he said before an American audience (Annapolis, Md., 28 April 1982), but he preferred the term "improving the process of regulation". In one of his first speeches as CRTC chairman (Calgary, 29 April 1980), he said, "There is little doubt that the total abdication of the regulatory process would lead to chaos and a lamentable decline in quality. We need to find a liberating balance between oppressive control and licentious abdication of responsibility."

The problem could not be left to the market to work out. "We in Canada tend, I think, to be a little less complacent (than Americans) about the benefits of the marketplace, quite simply in part because there exists rather less of a market" (Québec, 13 May 1981). How many services could it support? And if it was desirable to restrict the number of services, there was a problem of concentration to be dealt with (Annapolis, Md., 28 April 1982). Besides (ibid.):

> (U)nregulated market forces cannot be expected to accomplish everything that a people may wish to do. I will suggest that, for Canada in particular, extensive deregulation would be inconsistent with the whole history and purpose of communications policy and would threaten the values which Canadians hold dear. (...)
>
> It is frequently and vociferously argued that regulation, by interfering with market mechanisms, distorts the allocation of scarce resources, thus making less than optimal use of them from society's point of view and lowering overall productivity. It is argued, too, that regulation stifles innovation and thus inhibits natural and creative adjustments to changing circumstances.
>
> Sometimes it is suggested as well that free markets provide the ideal reflection of consumer choice. I do not intend to discuss this last point in detail today except to say that, given the manipulations of advertisers and the rigidities of the mass-production imperatives, I am not convinced that the revealed preferences of individuals as consumers are any more deeply rooted than the revealed preferences of individuals as voters.

> On the contrary, it is I think irrefutable that market transactions reveal not the absolute preferences of individuals but the choices they make among a restricted range of possibilities, itself defined by a limited and arbitrarily selected number of players. (...)
>
> Markets ... are great for creating wealth. But in a society which has any compassion, we do not accept the market's determination of how rich the rich shall be and how poor the poor. Considerations of equity intervene. (W)hat we must talk about when we are discussing the role of market forces versus the role of government interventions, is values.

In his speech to the Broadcast Executives Society last spring (Toronto, 11 May 1982), Meisel said, "We are trying to find better ways to encourage, cajole, facilitate, or compel broadcasters to meet the objectives of the Broadcasting Act."

Wrestling with market structure and behavior rather than with the limitations of scarce frequencies, the CRTC asserts the "values" set forth in the Broadcasting Act, which are program values: "varied and comprehensive", "reasonable, balanced opportunity for the expression of differing views on matters of public concern", "high standard", and "using predominantly Canadian creative and other resources". And in general, of course, ownership and control of the system is assured to Canadians in order to "safeguard, enrich and strengthen the cultural, political, social and economic fabric of Canada" (Calgary, 29 April 1980). And (Toronto, 31 May 1982):

> No matter what the evolution of the economy and technology may bring, the CRTC will continue to regulate all components of the broadcasting industry so as to achieve a broadcasting system that serves the interests of Canada as Parliament unanimously expressed them.

The CRTC and cultural industries policy

One of the strongest thrusts given to the CRTC during the Trudeau ministry, and carried from the CRTC into government policy, is an emphasis on the industrial base required for Canadian popular culture. The thrust is associated with Pierre Juneau, through his positions as Chairman of the CRTC, member of the Telecommission and adviser on communications and cultural policy, and deputy minister successively of two departments responsible for government cultural policy.

In speeches of recent years as Deputy Minister of the DOC, Juneau has broadened his pitch to cover all the "information industries" and says (Montréal, 11 December 1980) "the creative content of products is what we buy and sell, the very stuff of commerce and trade. What was peripheral is becoming central. What was elitist is becoming universal."

> (O)ur most urgent and important goal is the building of an attractive software industry, using this term in the widest sense, to include the content of our information systems, the programming of our information machines and the design of all we produce; in short, the output of our creative community. I believe that we have a unique opportunity to play a leading world role in the development of creative information content, and to enjoy the many rich and varied rewards of such a role. (...)
>
> If we could exploit our understanding of the vast English-speaking North American market, as well as our non-threatening posture abroad, and our skill in the development of communications networks, then the Canadian information distribution community could be turned into a strong component of a powerful Canadian information industry. The experience of Harlequin, K-Tel, I.P. Sharp and Datacrown shows the capability here.

Speaking to an audience of broadcasters the next year (Victoria, 21 May 1981), Juneau said "creativity has become a factor of production, an essential element in the creation of new wealth, along with land, capital and labor". But production values are very costly:

> They represent research on the script, care in the writing, the subtlety of the soundtrack and the music, the special effects, the stuntmen, the scenery, the equipment, the clothes, the rehearsal time, the post production care, the thought that goes into the marketing. (...)
>
> (T)he heavy upfront costs of information products have to be written off over larger and larger markets. Inflation and increased competition drive these costs still higher, until a world class standard evolves, against which domestic products must compete.

In Juneau's vision the cultural industries support one another, each offering the others external economies. The government and its agencies are in an orchestrating and supporting role. This theme, with its strong emphasis on industrial strategy in Canadian and world cultural markets, finds a reflection in the Meisel speeches and more particularly in the CRTC's pay-TV decision (CRTC 82--240) and the report leading up to it, The 1980s: A Decade of Diversity -- Broadcasting, Satellites, and Pay-TV. The report, dated July 1980, came from a CRTC committee (including representatives of the provinces) under the chairmanship of Réal Therrien, vice-chairman of the CRTC, and was prepared with the assistance of Henry Hindley, mentioned earlier in this report in connection with his work on the Telecommission and the Clyne report.

"The Committee is unanimous," the report said (p. 59), "in its conviction that the chief justification for introducing pay-TV into Canada must lie in the opportunity it would afford as a stimulus to the program-production industry and the provision of new services."

For eight years, including a period under Juneau, the CRTC had been holding back pay-TV, chiefly on the grounds that it would be "disruptive" of the existing broadcasting industry. The latest report on the subject, in 1978, said introduction of pay-TV would be "premature". But in 1979 the Clyne committee (Ch. 8, pp. 47-49) said it believed "fragmentation of the television audience is inevitable, and may perhaps be desirable" because viewers would have more choice. It urged pay-per-program rather than pay-per-channel licensing, since "pay-per-channel would entail the continuing subjection of television audiences to lowest-common-denominator programming; pay-per-program would attract audiences, relatively small perhaps, but still substantial, for Canadian and foreign productions of the highest quality". The Clyne report saw no rush to approve pay-TV, but made a recommendation which appears to have become a key element in policy-making, "There should be a levy on profits from pay-TV, to be used for Canadian programming ...."

What had changed in the Therrien committee's view by 1980 was "the phenomenal spread and success of pay-TV in the United States". That is, Canadians, who were already strating to pirate the American product, were creating a demand that would imperil broadcasting regulation in Canada if it were further denied. There was also the fact that Saskatchewan

already had its own closed-circuit pay-TV outside the CRTC's jurisdiction, Québec had licensed a not-for-profit closed-circuit pay-TV operation, and guests in a number of the country's hotels could regale themselves with pornographic movies and other fare on pay-TV.

The Therrien committee was also important in dealing with some of the issues raised by pay-TV and recommending policies, some of which were adopted in the eventual CRTC decision.

Many writers had noted the difficulty of basing regulation on transmission technology, since means of transmission were multiplying and several were interchangeable. Thus functional distinctions could become more important tools of regulation, both in focusing government support and avoiding concentration in the broadcasting industry. The Therrien committee distinguished between (1) program producers, (2) program distributors (or program-packagers), and (3) exhibitors (who undertake local delivery). In the CRTC decision, these distinctions were remarked and a policy laid down of establishing conflict-of-interest rules against integration of two or more of these functions under single control. This was analogous to the recommendation of the Royal Commission on Newspapers in 1981 (RCN report, p. 241) that legislation should "prohibit a newspaper proprietor from being the carrier systems operator of any screenprint or similar service", although a newspaper could be an "information provider". That is, in Therrien terms it could be a "program producer", but not a "distributor" or "exhibitor". The RCN also recommended prohibition of

cross ownership of companies on both the "content" side (information providers and distributors) and the "carriage" side (Therrien's "exhibitors").

The Committee took the "tiered" approach to the pricing of cable television (p. 57):

> Level 1: the normal subscription rate for whatever channels may be authorized by the CRTC (a service that must remain attractive to those who do not want to subscribe to optional services).
>
> Level 2: an additional, probably fairly modest, rate for delivery of optional special-audience or target programming.
>
> Level 3: a higher additional fee for delivery of costly mass-appeal entertainment, first-run movies, specials produced by independent entrepreneurs, and sports and other events not pre-empted by broadcasters.

Important additional recommendations regarding payment were made later in the report. It was urged (p. 76) that "a viewer who wants to subscribe to pay-TV services should not be required to take the ordinary cable service as well". In other words, subscribers could choose among the tiers, rather than having them as add-ons to the basic service. (A Level 4 and other levels of screenprint services are additional possibilities.) Therrien also recommended that "In any system of differential tariffs for reception of optional television services, there must be an assurance they not be cross-subsidized by the subscribers to ordinary cable service." Envisaging a common-carrier role for cable in relation to pay-TV, it recommended that "Cable undertakings should not be restricted to offering only one pay-TV service, and it is essential that their facilities be made

available without discrimination and at charges that are fair and equitable to all authorized pay-TV distributors."

Contrary to the Clyne committee recommendation, Therrien held that a pay-per-channel system should be required at the outset, leaving room for pay-per-program systems to be added or substituted when a stable market had been established. This can be seen in relation to the main thrust of the Therrien report, which was to support cultural industrial policy and build the Canadian program production industry. The committee observed (p. 60):

> For many years, there was no market for Canadian films (and consequently little production) because the distribution system in Canada was tied to British and U.S. studio interests, a condition that still continues to some extent. Another obstacle to growth, some independent film makers charge, has been the relatively small amount of production commissioned from the private sector by the NFB, the CBC, and private broadcasters. (...)
>
> Canadian broadcasting policy and the creation of the CBC have together ensured that the distribution of television programming in Canada would, unlike that of Canadian films, remain in Canadian hands. But Canada was at a disadvantage in gearing itself to the introduction of television. In the U.S., and to a lesser but substantial extent in many other countries, there was a powerful and well developed film industry on which to draw for artistic, technological, and managerial know-how. In Canada there was no significant feature-film industry, and everything had to be done from scratch.

Incentives were now needed if Canadian film producers were ever going to produce films attractive enough to audiences that they could be used to fulfill Canadian content requirements. In their absence, broadcasters would tap the ready audience for Canadian-produced news, information, and sports programming, and go for their dramatic and entertainment programming to the United States. Popular U.S. programs in

this cateory could be obtained for about a tenth of the cost of producing similar programs in Canada. That is, they are "dumped" in Canada in somewhat the way the O'Leary Royal Commission on Publications said the U.S. content of Canadian editions of American magazines was dumped, giving American magazine proprietors an unfair advantage over Canadian. The Therrien committee said (p. 61):

> The Canadian broadcaster is thus faced with a dilemma; to produce a program of competitive quality costs a great deal more than acquiring an American one, and it is almost certain, in the present climate of mass-audience advertising, to attract less commercial revenue. The best way to deal with a dilemma, it has been said, is to seize it by the horns and shake it till its teeth rattle, and the best way to rattle the teeth of this particular dilemma is to provide new sources of funds and new incentives for Canadian program production.

The Therrien committee said a "shot in the arm", amounting to some $350 to $500 million, "must be found if the Canadian production industry is ever to become effectively competitive". It recommended that "The federal government should consider the introduction of a program of tax and other incentives for the production of television programs in Canada." But "A consensus of a majority of members of the Committee was that surcharges on subscription rates for cable and other local delivery systems should not be used as a means to support the Canadian program production industry." It went on to say:

> Different considerations apply, however, to pay-TV. It would be entirely optional and in the nature of a luxury available only to those with sufficient disposable income to afford it. The principle of taxing luxury goods and services at higher rates is widely accepted and some members believe that its application to pay-TV would appear to be unexceptionable.

Therefore, following Clyne, Therrien recommended "Consideration should be given to imposing a flat surcharge on the rates paid for pay-TV services, and to methods of distributing the proceeds to the maximum advantage of the program production industry."

The Therrien report contributed to the guidelines under which the CRTC finally issued pay-TV licences (CRTC 82--240) in March 1982 for one national general interest service in French and English, three regional general interest services (Atlantic, Ontario, and Alberta), one specialty (performing arts) service, and one regional multilingual service. The Commission said the services would increase viewer choice, "inject considerable revenues into the Canadian production industry", and, under Canadian content rules, increase Canadian programming on the whole broadcasting system. All pay-TV services were to be delivered by satellite to local cable systems.

The Commission said it hoped soon to license an additional regional service, in French for Québec and neighboring French-language communities, and an additional western service for B.C. and the Yukon. Although the Commission originally opted for "discretionary" services rather than "universal" -- i.e., voluntary rather than compulsory with the cable package -- it now said:

> The Commission has found persuasive the arguments presented at the public hearing that a desirable way of ensuring the evolution of a distinctively Canadian pay television system may well be through the adoption of a universal pay television service. Such a service holds the promise of being uniquely Canadian in content and character, while at the same time being available at a reasonably low cost. Further, the Commission considers that it would be desirable if the pay television system in Canada

> responded to a balance of economic, social and cultural incentives. A universal pay television service would be a suitable mechanism to achieve such a balance, especially if it were operated on a non-profit basis.
>
> Because of its guaranteed revenue base, a universal service would have the ability to inject substantial revenues into the development of quality Canadian programs.

The Commission said a public hearing would be held to consider the proposal and how it might best be implemented. The Commission would also look into other specialty pay-TV services and the possibility of pay-per-program services at a later date.

The CRTC's pay-TV decision came in for some cutting criticism, not least in a minority opinion from Commissioners Gagnon and Grace. This will be left to the following section of comment on regulatory development in Canadian broadcasting.

Broadcasting policy reviewed

The broadcasting policy put in place fifty years ago, tying protection and subsidy together in a single system, has proved to be an engulfing but rather ineffective mechanism. More and more of the country's cultural activities have been brought under its philosophical umbrella until today in the DOC we see its tenets applied as an integrated policy for the whole field of communications and culture. Since the policy still carries the seed of the Aird Commission's original intention in 1929, that all radio broadcasting in Canada be nationalized, it is easy to see why it withers as it grows. Canadian society is simply resistant to the degree of cultural

tutelage implied by the pretension of the Broadcasting Act that Canadian broadcasting constitutes a "single system", embodying a set of goals and principles that are to be effected through the supervision and regulation, however friendly and conciliatory and democratic, of the Canadian Radio-television and Telecommunications Commission.

Robert E. Babe, in a study prepared for the Economic Council of Canada, Canadian Television Broadcasting Structure, Performance and Regulation, writes (Babe, p. 225):

> The question arises ... as to whether the objectives set for Canadian broadcasting are feasible. These goals appear to be largely incompatible with a high capacity broadcasting system and the audience fragmentation that results therefrom. Certainly it appears that a major element of the CBC's interpretation of its own mandate -- namely, the provision of "a shared experience of being Canadian" -- is incompatible with widespread fragmentation of audiences. (...)
>
> Furthermore, the objectives of the Broadcasting Act may be questioned in terms of desirability.

In simpler terms, it doesn't work, won't work, and shouldn't work. Why shouldn't it work? Babe says the answers are to be found in response to the following questions:

> What is the appropriate role of government in directing or influencing viewing habits? To what extent should the viewer be limited in his access to the range of available viewing options? How compatible are the goals set for broadcasting with freedom of the press? This latter question also arises in the analysis of the CRTC's role in regulating program quality. What is the purpose and philosophical underpinning of the nation state? For example, if a nation is philosophically defined as a voluntary association of individuals with common aspirations, does not the conscious molding of such aspirations by government turn the concept of the nation state on its head?

For those who find philosophy tiresome because it raises more questions than it answers, we turn back to the reasons why Canadian broadcasting policy doesn't and won't work. Says Babe (p. 11):

> Canadian broadcasting suffers from an advanced condition of schizophrenia --"advanced" because it has attempted to function with this condition since passage of the first Broadcasting Act in 1932. Broadcasting undertakings in the private sector are expected to act as chosen instruments for implementation of public policy while simultaneously pursuing the profit objectives of private enterprise. Even the Canadian Broadcasting Corporation (CBC) is required to pay due attention to commercial considerations in its pursuit of the national goals. The history of Canadian broadcasting can be viewed primarily as the continual struggle and tension between commercial forces and incentives on the one hand and non-commercial public policy goals on the other.

Another theme developed by Babe is that, in practice, the series of regulatory authorities that have presided over the "single system" -- the Canadian Radio Broadcasting Commission (CRBC) from 1932 to 1936, the Canadian Broadcasting Corporation (1936 to 1958), the Board of Broadcast Governors (1958 to 1968) and the Canadian Radio-television and Telecommunications Commission (CRTC), to use its latter-day name (1968 to the present) — have all acted to protect the licencee's property rights in their pieces of spectrum rather than the public's right to have the spectrum regarded as public property whose use should serve public goals. There has been a tendency to make frequencies scarcer than they actually are. Industrial protection policy has overridden cultural policy, competition policy, and industrial development policy. The long delay in introducing pay-TV can be seen as an example. The "learning curve" approach to new services, outlined in chapter 2, has found little favor with the regulators.

Mr. Babe, somewhat perversely in view of the philosophical questions he raises, advocates a tighter system for making licencees live up to the promises of performance they make to the regulatory body. These promises, of course, are based on the objectives for the "single system" set out in the Act, as interpreted by the CRTC.

A wide variety of views on how to make Canadian broadcasting responsive to the needs and wishes of Canadian audiences was heard at a seminar sponsored by the CRTC in 1981 and reported upon in a Commission document, Balance in Broadcasting. The director of journalism at University of Regina, Ronald Robbins, a former CBC executive, maintained, for example, that "technological growth in the availability of delivery systems is superseding regulatory means to provide public access to sources of information and entertainment".

A communications lawyer and prominent Liberal party member, Jerry Grafstein, argued in the same vien that "the world is moving from an era of spectrum scarcity to one of spectrum abundance, with the development, especially, of sophisticated two-way cable systems. Because access to the electronic highway will become easier, balance will become less of an issue." He suggested associating an "audience council" with the CRTC.

Professor Liora Salter of Simon Fraser University said the regulatory agency must address these questions: "What kind of capacity for future services is being built into the system, and how is this reserve capacity being protected? Second, what resources will be necessary to use that reserve capacity, and what can be done to make sure that it can be

utilized by those without extremely large financial resources? Third, what resources are those currently engaged in broadcasting putting into the origination of material? Fourth, what differences in design of new systems could be made, so that the system becomes more accessible and less rigid?"

David MacDonald, a former Progressive Conservative Minister of Communications, dealing primarily with news and public affairs programming, proposed a fundamental autonomy for journalists, but not for the media corporate organizations to which they belong. He said journalists required protection from corporate as well as state interference, a position analogous to that of the Royal Commission on Newspapers, under the chairmanship of Tom Kent, but at variance with the reaction to the Kent report from the PC caucus. MacDonald urged the TV equivalent of a press council be established. (In Québec, Radio-Canada is a member of the Press Council.)

John Hylton, a communications laywer, argued that there already were enough public bodies to protect the individual. In the age of spectrum abundance outlined by Grafstein, "balance in broadcasting will become the responsibility of the viewer".

Harry J. Boyle, former vice-chairman of the CRTC, "warned of the danger of unnecessarily rigid legislation". The key issue for the future "is to develop technology in such a way as to enhance creativity".

A number of the problems that can arise under the present regulatory system are represented in the stiff dissenting opinion of

Commissioners Gagnon and Grace to the CRTC's pay-TV decision (CRTC 82--240, p. 65).

The way in which the regulatory authority can favor "chosen instruments" of its policy was illustrated by its licensing of First Choice Canadian Communications Corporation for the national general service in French and English. Other candidates had presented superior proposals for the French service, the two commissioners said, while First Choice planned to give English Canada a full English service and Québec and the rest of French Canada only a bilingual service. Yet First Choice had been allowed an amended proposal to overcome the shortcoming. Said Gagnon and Grace:

> (H)aving found the application of First Choice to be unacceptable in this respect, it does not, in our opinion, now come within the competence of the Commission to refashion so vital an element of this application in such a way as to make acceptable and therefore, licensable, what would otherwise have been found unacceptable and unlicensable.

Furthermore, the two commissioners noted that the CRTC had left the way open to First Choice's reverting to a bilingual formula for the French audience once an all-French but regional (Québec and neighboring areas) service had been licensed.

> (T)he contemplated regional service would be no substitute for a strong, comprehensive national network. French and English-speaking Canada extends beyond the envisaged territory. The concept of territorial bilingualism has been discredited and should not now be reintroduced by a regulatory decision. Furthermore, such a regional service, even if it were to come into existence, cannot be allowed to supplant a national service, particularly if the effect were to weaken the quality of French-language service offered to French-speaking viewers outside of

> Québec, Ontario and Atlantic Canada who have the same right to receive a separate and distinct French-language service as do English-speaking Quebecers to a complete English national service.

Gagnon and Grace also attacked the Commission's turnaround on the question of a mandatory pay-TV service, after it had specifically stated in its call for licence applications that it had a "strong preference for a pay television service which individuals would be entirely free to buy or not to buy".

> The very question of a mandatory pay system raises substantial questions of policy and law. Should Canadians be required to pay for programs for which they may have no desire merely because they want basic cable service? Does the Commission have the authority to impose what could well be construed as a tax by another name in forcing a payment for made-in-Canada pay television? Are the problems of securing financial and program accountability of such a system so severe as to be overwhelming? Is a mandatory, universal pay television system, if that is what the public wants, something that Parliament, not a regulatory agency, should bring into being?
>
> We see a mandatory, universal pay television system as a new CBC without commercials: an ill-timed, expensive luxury in two languages for which no public demand has been demonstrated.

The two commissioners also saw such a system, with its universal subscriber base, as having a "deleterious, if not devastating" effect on the revenue base of the discretionary services already licensed and their ability to bid for program content.

Gagnon and Grace felt the licensing of so many pay-TV services in the March 1982 decision already constituted "system overload".

> The Commission is now licensing six pay services and is calling for two more regional pay systems, not even taking account of Saskatchewan which has its own provincial pay system. How many of these birds will fly?

The conclusion I draw from reviewing broadcasting policy is that the concepts of the 1930s have been stretched beyond all reasonable limits to apply to a much broader range of concerns in the 1980s. Tight, single-minded, patriotic, and coercive definitions and directions have been applied -- here and there, in part or in whole -- to general communications policy, general cultural policy, radio policy, television policy, cable policy, general telecommunications policy, and now telematics policy. The comment made by Professor Salter at the CRTC's seminar on balance in broadcasting is to the point, "The regulator and what it is supposed to regulate are profoundly out of sync." Another communications professor, with long experience in cultural and communication policy in government, suggested in an interview for this report where the reform of broadcasting policy might begin. "We should eliminate the concept of broadcasting," he said. "What you have to identify are the actors and the services -- producers, programmers, carriers."

V. TRANSMISSION

Introduction: Capacity as the Key

The Clyne report observed that "each clearly marked advance in telecommunications has been made possible by the development of a greater carrying capacity in the means of transmission" (Telecommunications, p. 8).

It is with carrying capacity and systems capability that this chapter is chiefly concerned. The new structure of communication in which capacity must be examined was set out by the Clyne committee as follows:

> It is no longer possible, as it was 10 or 15 years ago, to distinguish between the technologies of telegraphy, telephony, radiocommunication, and computers. All are used, to a greater or lesser extent, in almost every mode of telecommunication, either in combination or in competition, thus undermining the structure of communications that has developed over the past 130 years.

Undermined along with the old structure was the system of technology-based regulatory jurisdictions, as the 1975 White Paper acknowledged (Communications, p. 17):

> The principal conclusion to be drawn from all the studies of communications in Canada that have been undertaken in recent years is that all forms of telecommunications have both national and local aspects, and that these aspects cannot be separated on the basis of the technological character of the facilities involved.

Within federal jurisdiction, as noted in the chapter on broadcasting, regulation has been moving away from technology-based classifica-

tions toward classifications based on service and function, such as content or carriage, and program producer or program distributor. The term "broadcasting" itself is no longer used in conformity with its technological definition of "transmissions ... intended for direct reception by the general public"; often broadcasting is intended for indirect reception by much of the audience. New kinds of carrying capacity and interconnections between different means of transmission are thus making some existing policies -- or at least the way they are expressed -- obsolete.

One set of policy changes, for example, is consequent on changes in what should be considered monopoly services, and what not. The Price Waterhouse report notes (PW, p. 40) that "A natural monopoly exists when the minimum average cost of production (or service) for the firm occurs at a volume of production which is equal to or greater than the total market demand". But "the concept of a natural monopoly assumes an undifferentiated product". And "because natural monopoly results from the structure of production costs, changes in technology can make competition viable in industries which were once natural monopolies, and vice versa".

Public policy is important in deciding whether particular services become more of a monopoly (cable) or less (telephone). Technology (electronic mail) can break monopolies no matter what the Constitution says (Post Office) but can also be used to teach old monopolistic dogs to do new competitive tricks (Post Office), if the Government wishes and Parliament approves.

The PW report points out (PW, p. 139) that in the communications/information sector "Carriage is by far the largest of the sub-sectors in terms of the production of goods or services in Canada for sale on the open market". And carriage, or transmisson, is dominated by the telephone companies (with two-thirds of the operating revenue and three-fifths of the employment), while the Post Office is a substantial second, and cable TV and other telecommunications carriers account for relatively small parts of the sub-sector in economic terms (PW, p. 31ff). For both the telephone companies and the Post Office, communication among businesses (including government) and between businesses and the public, constitute well over half of their traffic. While cultural content may be the "carriage trade" of the carriage business, it is not a major part of that business in economic terms. The report observes (PW, p. 140):

> In most aspects of carriage, the service would be far less valuable to the customer if it were not used by both businesses and households. Use of the mail for billing and payment and of the telephone for taking retail orders are examples.

The report, like the von Baeyer report before it, thus sees carriage capacity growing in response to the business and consumer markets' being developed in tandem, but with the "business market", broadly defined, tending to lead the way in technological development that can then be spun off to the general consumer market.

Carrying capacity: a new architecture

The carrying capacity of a communications mode can be seen as the volume plus the capability, or sophistication, it offers the user. For example,

Telidon, which was originally designed for telephone transmission, has benefited from speeded digital transmission in recent years and also benefits from the fact that the telephone mode is a switched interactive network. By comparison, Telidon graphics (and photos even more so) can be brought up faster and better by the broadband cable mode, but so far cable is far from universal and is not a switched interactive network, thus severely limiting its present utility for Telidon or other videotex systems. Capability here, it has been suggested, could be improved by an inter-modal, or hybrid, network combining the capabilities of telephone and cable.

Instant World observed in 1981 (p. 149) that "the world of telecommunications and computers today is far from ideal. Telegraph systems rarely interconnect with telephone systems, CATV systems are seldom connected with each other and never with switched distribution networks, and microwave systems with unused capacity remain dedicated and introvert."

Much has happened since then, and particularly since the CRTC's interconnect decision in 1981, which followed closely on the interim attachment decision. But governments have not given the urgency that the von Baeyer task force recommended in 1972 to ensuring "the evolution of data communication systems towards an effective, coherent data communication network".

One of the major problems of decision-making and planning today is that there is no careful assessment of transmission capabilities in

relation to projected needs such as was provided by the von Baeyer report. It is a complex and controversial area involving huge stakes for the various players, but need it be as muddy as it is? Consider the following from the Clyne report (p. 26):

> It cannot be denied that there would be economies if all local access were provided through unitary connections, but that is not to say that immediate action is necessary or even desirable to force the installation of integrated plant at a pace that is not dictated by practical considerations now or possible in the future.

Such inconclusiveness was not surprising from a committee given only a few months to do its work and it led to the following recommendation:

> The pace and extent of plant integration for local delivery of telecommunications services should be determined by future technological, economic and social considerations.

A clearer picture of these "considerations" will perhaps become available in reports now under preparation by the economics branch of the DOC's policy sector. In the meantime, both the prevailing uncertainty and the need for research to lessen it were stressed in the Price Waterhouse report (PW, p. 155ff). Looking at the whole communications/information sector, the report said that "we have been struck by the degree of uncertainty as to the technical, and particularly the economic, viability of alternatives". The full list of subjects that needed examination, in PW's view, is given in Appendix 3. Obviously systems capacity must be related to probable demand and much of the list deals with getting a clearer idea of the kinds of services that may have to be provided. Of particular relevance to the carriage business would be research into:

> . the technical feasibility of moving from the present architecture of carriage systems to a new architectue which might be more attractive in the long run given the carriage media and switching systems now available and the services which may be provided.

This "new architecture" is what Instant World, von Baeyer and Professor Liora Salter, quoted in chapter IV, were mostly talking about. It relates to the DOC's role of comprehensive planning and policy-making which, as has been pointed out, has been rather neglected. In the past couple of years, however, the challenge has received increased attention in the department's strategic overviews. The overview of March 31, 1981, stated, for example:

> The applications of new information-processing technologies will greatly increase the demands placed on telecommunications infrastructure and radio frequency spectrum. It is therefore critical that technologies be developed to expand the carrying capacity of the former and to ensure the orderly, efficient use of the latter. If this is not done, it will be impossible to satisfy user demands and derive the benefit of these technologies.

The department's current policy is that "Telematics research and development is to focus on the techniques and the protocols which make possible the interconnection of informatics systems through telecommunications networks" (Overview, March 31, 1982, Appendix E, p. 3). The GTA (Annual Review 80-81, p. 21) notes that one of the objectives of the Office Communications Systems Program is "to develop a comprehensive range of Canadian products and services capable of operating in an 'open systems interconnection' environment"; that is, an environment in which systems are open to connection with other systems, and networks to other networks. The Review, in its survey of transmission facility suppliers (p. 35), notes that broadband media, in particular cable and satellite, are coming into

their own for business traffic because of their high capacity and speed. That raises the question of the extent to which the telephone companies will move to use of broadband optic fibre cable in local loops (they, too, can use satellite long-haul) to retain their competitive position, especially in the Local Area Networks that account for the bulk of business telematics, but also later in home delivery.

The Clyne committee in 1979 estimated that the present plant of the established telephone carriers represented an investment of over $6 billion. A telephone company executive said in an interview for this report, "There's quite a bit of life yet in the old twisted pair." An executive in a competing company said, "Every Canadian should have broadband transmission facility into the home or office, a broadband highway." He also held that "electromagnetic spectrum anywhere is a public resource", whether it is in a narrowband twisted pair, broadband coaxial or optic fibre cable, or in air and space. The Price Waterhouse report expected that "the introduction of new technology will be gradual because of the tremendous amount of long-lived plant in place" (p. 51). It noted that "there is some concern that new telecommunications technologies are not being implemented as fast as could be justified economically because of:

- the long depreciation periods approved by regulatory authorities, which make it difficult to justify both the replacement of existing assets which are not fully depreciated and the purchase of new ones, which could remain on the books long after they become obsolete;
- the alleged preference of telephone companies for using their own terrestrial facilities even if satellites are more economic;
- the requirement for CRTC approval of new services offered by cable companies; and
- the limits on customer choice, until the recent interim decision of the CRTC, with respect to terminal equipment.

Depending upon the vantage point from which they are looking at communications, the reports available to the DOC vary widely in their judgement as to whether transmission capacity in Canada is inadequate, adequate, or excessive. Proposals for investing heavily in national projects for technologically advanced systems, and reaping the "learning curve" benefits in effectiveness, productivity and sales abroad, run into the "life in the old girl yet" argument and warnings not to duplicate in communications the overbuilding of railways that occurred at the turn of the century.

In the Government of Canada, at least, the dangers of too rapid advance do not appear great. The GTA observes (Annual Review 80-81) that "much of the existing government network has remained essentially unchanged in efficiency and service level for over twenty years". It adds, however, that "by the mid 1980s responsive, economical shared office communications facilities will be available through the Agency".

In its transmission survey, the GTA's Annual Review drew attention to the establishment due in 1983 of an Integrated Satellite Business Network (ISBN) by the Computer Communications Group of the Trans-Canada Telephone System. It will provide transmission facilities to medium and large sized organizations for all types of business communications in Canada and abroad. Two other developments noted were Bell Canada's Envoy 100 and CNCP's Infotex. Both

> offer what is essentially an electronic mail service in which the capabilities of the terminal equipment are augmented by intelligence in the network. Thus any dumb, asynchronous

terminal connected to Envoy 100 can provide access to mail management services and to all other terminals on the network, as is the case with telex and TWX, and can be used for purposes other than communications such as data processing. Similarly, Infotex permits communications among major makes of incompatible word processors and between word processors and telex machines. The current alternatives to Infotex for communication between word processors are a translation software package or a protocol conversion device.

Under trial this year is the TCTS Computer Communications Group's iNET (intelligent network), which would permit both alphanumeric and Telidon-type alphageometric terminals to access multiple data bases "easily". (It won't be as easy as all that -- see chapter 2 on different formats for videotex and personal computers.) The target user is the executive, manager and professional.

Local area networks (LANs) are under rapid development. These "provide electronic support for the estimated 81 per cent of business communications which take place within, rather than between, office buildings and complexes. Until recently, this huge potential market has been served only by the telephone network, with the result that text messages often take days to be delivered from one floor to another." One of the business executives interviewed for this report said, however, that the government's OCS program had been so delayed and distorted that promising possibilities for his group (OCRA) to enter this field had receded.

The discussion of transmission capacity so far brings us to a question which all the communications studies from Instant World onward have raised: Should Canada (sooner), or will Canada (later), have a national switched cable network or networks? We have already seen the

GTA's emphasis on broadband communication through cable combined with satellite, which is suitable for broadband because of the extremely high frequencies used. The advent of cable-satellite pay-TV, due in April next year, and the licensing of experimental screenprint services on cable by the CRTC, brings the day of multi-service cable, and hence of probable increased consumer demand, closer.

Cable and satellite: partners and rivals

Almost six out of 10 TV households in Canada are connected to cable TV (RCN research, vol. 1, p. 17), with the percentage having cable ranging from a low of 40 per cent in the Atlantic region to a high of 79 per cent in British Columbia. (The survey was done early in 1981.) Indeed, it is said that in Victoria, B.C., the only point of television stations going "on air" rather than direct to cable is to reach a handful of rural viewers and qualify as "broadcasters". A business executive connected to the cable industry, who was interviewed for this report, said the present potential for cabled households in Canada is 70 per cent; that is, households constituting 70 per cent of all those in Canada, amounting to a potential 4,400,000 subscribers, could hook up to cable without extension of existing networks. (He compared this to 22 per cent in the United States. But the lower U.S. percentage still means a much bigger subscription base, 28 million households, making the U.S. market highly attractive to the Canadian cable industry, which has had a good deal of success there.)

The RCN research also tells us (Vol. 1, p. 16) that of all Canada's TV homes, which constitute 98 per cent of all households in the

country 34 per cent have two TV sets, though we are not told what proportion of this group also has cable. The propensity toward having a second set is , however, important to the possible demand for cable services. Households might want to keep one set free for the increased variety of regular TV, and adapt the other to receive videotex services.

In any case, the heavy cabling of Canada, the imminence of new services, and the parallel development of business cable services, raise the question of whether the government is going to let the market, and the CRTC, take its course, or whether it will feel bound to intervene in order to assure universality, adequacy of technical standards, and reasonable rates. In other words, the government is faced with the "right to communicate" principle postulated by Instant World and the criteria it implies for government policy. Are there to be information-rich and information-poor? Are all to have access to interactive communication in the screenprint medium, or is one-way communication good enough for those who can't afford the more sophisticated facility? Going further, should all have access to shared visual space, or only some? We are not talking here about the government paying for people's terminals or the services they may choose to access on them, but about the extent, the capacity, and the capability of networks, and the equipment standards that may be set by government. In Saskatchewan, the government-owned Saskatchewan Telecommunications has already started building a broadband optic fibre trunk network to link all communities over 500 in population. Later stages

of SaskTel's project provide for local optic fibre loops as well, making it potentially an everyone-to-everyone-with-everything electronic highway within Saskatchewan.

The prospect of a cabled Canada, in which cable provides local delivery but is abetted by, or is reliant upon, satellite transmission for long-haul, raises a host of questions. Are the present cable companies, with about half a billion dollars in equipment, but who lease 70 per cent of their cable loops from the telephone companies, to be the owners of the network, the carriers? (Not in Saskatchewan, where SaskTel has exclusive rights over the carriage of cable TV offerings except in a few instances.) The trend in reports to the government has been increasingly to regard cable companies as carriers rather than broadcasters, a trend vigorously opposed by the cable companies, which wish to remain multi-functional.

The Price Waterhouse report says (PW, p. 31):

> We have ... concluded that the economic characteristics of the cable industry resemble those of carriers more than those of broadcasters, and that the future of the industry is more likely to lie in a broader range of carriage functions, including the distribution of pay TV, than in a more intimate involvement with content. We pass no judgment on whether this evolution is desirable from a policy standpoint.

In another part of the report (PW, p. 59), however, the question is raised of whether a monopoly service should be able to use the advantages of its monopoly to compete with providers of services carried by the monopoly. The Clyne committee came down on the side of separating content and carriage, though it would have allowed carriers some entree into content through "arm's length" affiliates, provided a costing régime was in

force which could clearly show that the arm's length affiliate was not getting advantages from its monopolistic associate. The PW report noted that "concerns about the monopolist's advantages are particularly serious where the competitive service consists of content. The existence of diversity of content sources may be a critical social objective, above all when the content is information, rather than simply entertainment."

Robert E. Babe (Babe, p. 123ff) describes the way in which cable has been regulated as a "hybrid", as both broadcaster and carrier, by the CRTC without being subject to demanding standards in either. Massive investment in expansion and raising standards would be required if existing cable systems were to grow into a national switched network, or a network associated with the telephone network to produce a new hybrid carrier network, to transmit audio, video, data, and graphics content. The PW report notes (p. 58) that:

> cable companies have not been required to serve uneconomic areas to any major extent to date, because cable TV was not an essential service. But if it becomes the delivery mechanism for tele-banking or other important services, universal access at reasonable cost might be considered of sufficient importance to require extension of cable systems on a cross-subsidized basis.
>
> The most obvious advantage of cross-subsidization is that it provides support for the social equity objectives of government without requiring taxation or direct intervention. It could also be argued that the costing of individual services involves a significant element of judgment in any event, so the joint costs may just as well be absorbed by service considered to be of lesser social importance. Providing a basic service below cost may also serve as a loss leader for the carrier, indirectly promoting growth in demand for related services.
>
> The argument against cross-subsidization is simply that it distorts resource allocation. It may lead to wasteful use of

underpriced services, while the higher priced service may become vulnerable to substitution, particularly as technology changes.

In view of the great increase in carriage that is going to cable, and in view of the extent to which cable is already regarded as "essential" by its subscribers (Babe, p. 129), it seems incredible that there should be continuing argument in favor of leaving the monopolistic mode of this transmission medium in the same ownership as competitive content. The pay-TV decision indicates that the CRTC is moving in the direction of separation, but one wonders whether this and other policy decisions of basic importance to Canadians should not be made by Government and Parliament responsible to the people, rather than by a regulatory body. In an interview at the CRTC I was told that giving the government power of direction over the CRTC would often mean just passing power from regulators to civil servants. That, however, points to another problem, not to a solution of any problem.

In the meantime, one policy study has been looking at cable as a base for a payments system and a taxation system. The broadcasting strategy paper which has been prepared in the policy sector of the department was not available to this writer, but it was available to the Toronto Globe and Mail and I am informed that the account given in the edition of August 11, 1982, page B5, is accurate, though one of course fears that it has not captured the full cogency of the departmental paper, which it reports to be 70 pages long.

The strategy paper proposes 8 per cent tax on cable subscribers to provide revenue for a Canadian Broadcast Program Development Fund (to be

administered by the Canadian Film Development Corporation), plus a "charge" to cover the cost of a second CBC service in English and French -- the much promoted CBC-2 -- which would be delivered to cable by satellite. These funds could not, of course, be transferred directly to program production and the CBC since constitutionally there can be no earmarked taxes. All government revenues must go into the Consolidated Revenue Fund (Guide, pp. 5,6); but Parliament can appropriate the equivalent of the amounts raised to the purposes proposed.

Cable subscription lists, and selective reception, can help solve the old problem of how to enable people to pay, or force them to pay, for the broadcasting they receive. In Britain and France, the problem was approached by charging an annual licence fee to set owners. In France, for instance, the buyer of a television set is registered for "le fisc" by the salesman, and annual tax bills pursue set and owner. Such a system was tried in Canada but dropped as impractical. It is costly to operate, invites evasion, and is resented. Whether a cable subscription tax will attract less disfavor remains to be seen; the DOC paper has helpfully suggested, acccording to the Globe and Mail, that "If the Government does not want to tax subscribers directly, cable operators could be taxed, perhaps by raising licence fees to 1.5 per cent of revenue."

The proposal in the DOC paper runs counter to the suggestion in the Therrien report that only pay-TV, as a luxury service, should be taxed. The committee held that a general tax on cable subscribers would be a tax

on particular TV audiences for the benefit of all TV users and thus discriminatory. A charge for CBC-2 as a standard cable service would run counter to the view of the Therrien committee, and the dissenting commissioners in the pay-TV decision of the CRTC (see chapter IV), that pay-TV should be a discretionary, not a mandatory, service.

The complexion of the debate would no doubt change were government to decide on a policy, as it did for radio and television broadcasting, of making cable as nearly universally available as possible. This policy in broadcasting has already taken radio and TV through the CanCom satellite service to remote communities for local re-broadcast. But as indicated earlier, the extension of cable carriage and the improvement of its capacity and capability into a national multifunctional system would be a huge investment, though one could imagine it as a useful and peaceful substitute for the war production that helped lift the country out of the last depression.

Other questions arise about the possible extension of the present cable system. Why go to the cable companies at all? Why not give incentives to the telephone companies to replace copper wires with optic fibre, thereby obviating the need for a parallel cable system with its gimcrack array of dropwires? Why go to either cable or telephone companies for much of the service? Why not go to direct broadcast satellites (DBS)? At present the CRTC is standing on guard against superstations, or American satellite "footprints" in Canada. But, granted that the CRTC

can prevent Canadian stations from broadcasting direct to viewers via satellite, footprints are bound to overlap borders, as Canadian satellites' footprints do in the northern U.S.; could the CRTC really prevent Canadians from paying by subscription to unscramble DBS-TV from an American superstation? And if it couldn't, could it then continue denying Canadians the right to operate superstations?

All these questions are raised here rather simplistically, not to suggest that they haven't been thought about -- they have, long, and deeply and expertly -- but rather to suggest that policy-makers are much further away from responding to them than they should be, given Canada's world lead in transmission technology and systems, its lead in attacking the policy problems in the early Seventies, now lost, and the impending necessity to make decisions for the usual reason -- the pressure of the United States' neighborly presence.

Instant World, in a discussion of whether satellite or cable would prevail in interntional communications, made the observation:

> Telecommunications planners usually strive for variety in the types of facilities to be deployed, so that system-strength and continuity of service may be ensured through diversity. Relative costs obviously cannot be ignored but, within limits, some extra cost can be justified if it helps to achieve the ideal total system.

Such an approach would argue against dealing anybody out in considering the transmission-capacity options in the Canadian domestic system. But it is inevitable that some will be dealt better hands than others.

Instant World also talked about the "impending possibility of virtually instantaneous transfer of information in any form between all parts of the country". We have mentioned the "impending necessity" of decision-making. But if the "possibility" is now closer at hand, and in part in hand, how imminent is the "necessity".

The Price Waterhouse report, as we have seen, tends to a cautious approach. Here it is again (PW, p. 62), on the subject of transaction systems:

> Any system which involves the use of millions of customer-owned terminals for ordering goods and authorizing payments must be able to ensure a very high level of reliability and control. It is partly because of this that we do not foresee rapid implementation of such systems. The government will have to play a role, if only to ensure that the interests of the consumer are protected and because it is itself a major issuer of cheques. In establishing its policy, the government should give due weight to the economic development potential of such system.

The point to be made is that some aspects of telematics are more imminent than others. But enough services requiring broadband transmission, or most appropriately delivered by broadband, are now available or shortly will be that the "new architecture" of transmission systems is needed now. But it must be "upwardly compatible" in order to accommodate the add-ons and enhancements that will be coming later.

Transmission architecture and the Constitution

The principles that must guide the Government of Canada and Parliament as architects of communication systems in Canada are given new and broader expression in the Constitution Act, 1982.

The relevance of fundamental freedoms enumerated in the Canadian Charter of Rights and Freedoms to the responsibilities of the Department of Communications has already been outlined in chapter III.

Various aspects of transmission architecture are relevant to Canadians' ability to realize the Democratic Rights enumerated in the Charter, such as the right to vote for members of the House of Commons and see that the Commons (whose rules are part of the Constitution) is performing in accordance with the Constitution.

Adequate transmission systems, and their extensions, also sub-tend the ability of Canadians to exercise their mobility rights and other government policies intended to make those rights a reality.

In the case of all rights -- democratic, mobility, legal, equality, and linguistic -- government bears some responsibility to make sure through its communications systems that citizens have the ability to ascertain what their rights are. Affirmative action programs for "disadvantaged individuals or groups" may particularly require that information be readily available to the people in question.

Capacity to recognize the constitutional law that "English and French are the official languages of Canada" has to be built into communications services. In many ways, including the ability of provinces to fulfill minority-language education responsibilities, the architecture of

national transmission systems can be a vital element in serving Canadian duality, as well as the multicultural make-up of both linguistic communities. The Charter also recognizes aboriginal rights, which underlines the desirability of communication services to meet their needs, as recognized by the DOC and the CRTC in recent years.

Section 20 of the Charter states:

> (1) Any member of the public in Canada has the right to communicate with, and to receive available services from, any head or central office of an institution of the Parliament or government of Canada in English or French, and has the same right with respect to any other office of any such institution where
>
> (a) there is a significant demand for communications with and services from that office in such language; or
>
> (b) due to the nature of the office, it is reasonable that communications with and services from that office be available in both English and French.

Communication architecture is also central to the commitments set out in Part III of the Constitution Act, 1982, dealing with Equalization and Regional Disparities. Under this section (36), Ottawa and the Provinces are committed to:

> (a) promoting equal opportunities for the well-being of all Canadians;
>
> (b) furthering economic development to reduce disparity in opportunities; and
>
> (c) providing essential public services of reasonable quality to all Canadians.

So basic to the well-being and economic development of Canadian society are the transformations being worked in the carrying capacity and capability of communication systems that efficient, multifunctional

transmission networks must surely be considered "essential public services" for "all Canadians", whether they are provided by the public or private sectors, or a combination of the two.

The Canadian Constitution, then, through many of its provisions underpins that "right to communicate" that was set out by the Telecommission in 1971 (Instant, p. 3):

> (T)he realization of a 'right to communicate' is a desirable objective for a democratic society, so that each individual may know he is entitled to be informed and to be heard, regardless of where he may live or work or travel in his own country. The people of Canada -- as a body and as individuals -- are therefore entitled to demand access to efficient telecommunications services on a non-discriminatory basis and at a reasonable price.

Carriage capacity and socio-economic policy

The degree and kind of government intervention required to fulfill constitutional obligations may well become a subject of more vigorous debate in the future than it has been in the past owing to the pervasiveness and transformative character of new communications technology. The thrust of earlier chapters on cultural policy and broadcasting was that government and regulatory practices in the realm of content may be more intrusive than is justified by the constitutional and technological environment. In this chapter we are considering the means of communication and their capacity to make Canadian content available, whatever that content may be.

Western European countries have greater government intervention in communications carriage than Canada owing to state ownership of posts, telegraphs, and telecommunications. But Canada is more interventionist than the United States in communications, as it is in a number of other socio-economic spheres.

The major gap which studies have identified in Canadian communications policy is the absence of regulation of national telephone rates, owing to the division of authority between the CRTC -- with its control over Bell Canada in Ontario and Québec, and B.C. Telephone in British Columbia, to mention the main ones -- and the various provincial regulatory authorities in other provinces. National rates are "brokered" by the Trans-Canada Telephone System, an association of all the carriers, and the regulatory authorities. The TCTS also controls traffic with the United States, while traffic with the rest of the world is handled by a crown corporation, Teleglobe Canada. The Clyne committee said (Telecommunications, p. 28):

> In our view the high level of long-distance telephone rates, an outgrowth of the uncoordinated regulatory process in the industry, is a barrier to national communications and understanding. We recommend that the governments and agencies involved cooperate to create a mechanism which will review long distance rates and determine that they reflect national as well as regional interests.

The Telecommission heard many suggestions a decade ago that the telephone, like the mails, should provide flat-rate service in each category of service to all Canadians. Given the increased variety of carriage on the telephone system, including "electronic mail", and the social and economic benefits flat rates would give Canadians as members of one national community, both within Canada and in relation to other countries, this issue would appear to be more pressing today than it was then.

The Government Telecommunications Agency, in discussing the Bell Canada Envoy 100 and CNCP Infotex electronic mail systems, noted (Annual Review 80-81, p. 37) that connect time would be free of charge and a given message could be sent anywhere in the country for the same price -- "a significant departure from pricing practices for telex/TWX and telephone". Now that voice and data are being combined in some systems -- Displayphone -- the technological distinction between "letters" and "telephone calls" is blurred and this forces a new look at rate structures.

While the government withdrew from the impossible position of trying to extend the Post Office monopoly over physical mail to electronic mail, the Post Office, or any new postal corporation the government may want to create, remains an instrument the federal government can use, with full confidence in its jurisdictional competence, to facilitate any policy it may develop regarding electronic mail.

The Price Waterhouse report discusses the possibilities of the Post Office's either sticking to the physical mail business or extending its services into electronic mail (PW, p. 63), and says:

> A more aggressive strategy would be for Canada Post to attempt to enter the field of "electronic mail". However, the fact that electronic funds transfer is likely to be one of the principal applications means that Canada Post would face opposition from the banks and other financial institutions. It would also face a major task in developing its own competence to develop and operate electronic systems. Entry into new fields is unlikely to be successful at least until Canada Post can improve the reputation of its basic service.

This passage raises questions of operational, rather than constitutional, competence. Nor is the government limited to using the present Post office organization. Without expressing an opinion on the issue one way or the other, it may be observed that the government can hardly accept as a matter of principle that any task to which it sets the hand of a crown corporation is doomed to be performed incompetently.

—

Any national approach to the rate-setting issue will involve the issue of subsidization discussed earlier, either cross-subsidization within systems, or subsidization of systems by the taxpayers, or both, as in the case of the present Post Office.

The increasing dependence of economic development on information and communications technology has been stressed in all the studies made by and for the DOC, bringing the department strongly into the realm of industrial policy. Canada's drastic trade deficit in the communications sector, discussed in chapter II on telematics, has been seen as a measure of the country's backwardness in the information age, as an explanation

or partial explanation of its poor productivity showing in the OECD studies of recent years, and as an explanation of the countrys' failure to meet the high social and economic aims enshrined in the Constitution Act of 1982.

Industrial policy combines strategies for innovation and growth, structural issues relating to competition and concentration, industrial relations, and human-resource issues relating to radically changing employment opportunities, re-training, education, person-machine interface, and in general the participation of people in industrial policy-making that is vitally affecting their working and leisure lives.

The Department of Communications was seen by the von Baeyer task force as being at the core of all these questions, as being a focal point for planning and coordinating policy, though other departments might be the natural ones to take the lead in different aspects of policy.

Transmission, and its extension into telematics, is the core of the Department of Communications, the focal point or nexus for considering the extent, capacity, capability, and networking of all those burgeoning techniques of communicating. But it would appear that the focal-point concept has been little more adhered to in the department than in the government as a whole. The line sectors of the department -- research, spectrum, space -- each have their planners and their specialties. Often "the other department of communications", the CRTC, has its own experts working independently in the same areas.

In interviews in the Arts and Culture sector, the Space sector, and the CRTC, for example, I ran into sharp criticisms that each paid no attention to the others in the design of communications satellites and the licensing of satellite services.

In the private sector, one executive who has had close relations with government for many years, said, "I have the impression that industrial policy never gets up to the top. It's handled by people, often very capable people, down in the sectors, but you run into conflicts between the policies being followed by different actors. That is not only true within the DOC, it applies to the government as a whole. Different departments appear to be pursuing initiatives that may be in conflict with one another -- one is trying to help you, the other to constrain you."

What the government giveth, the government also taketh away. It is a familiar story and not one which is likely to have a happy ending, ever. But within that perception of reality it would appear that a more judicious and coordinated selection of what is to be given, what taken away, would produce a less negative -- more positive? -- equilibrium than exists today. One of the essentials, as suggested in an earlier chapter, is to get culture and communications out of one another's hair and, if the department is to be a department of communications and culture, to regard communication as one core, culture as another, inter-connected where appropriate, as through an "electronics and humanities" branch, but not "integrated" at all levels of policy planning and coordination. In the communications core, a focus on transmission and its informatics hardware and software extensions into telematics -- but never into control of content -- would help to suggest an order of priorities for the department.

VI. MEDIATIVE PLANNING

Down, Up, Crossways, and Outward-Looking

Policy-making and attendant planning in government are top-down, bottom-up, horizontal, and outward-looking.

Policy and planning are top-down because the political system requires a government responsible to parliament to set policy and guide administration. The process is bottom-up because the public administration is an information machine required to keep government aware of the problems and opportunities needing attention, and to provide government with its best assessment of options for dealing with them. The process is horizontal because the various streams of governmental policies and activities are complementary and interdependent. The process is outward-looking because the sole purpose of government is to serve people and society.

It follows from this description that any government apparatus, like any complex communications network, needs a number of mediation centres or focal points to see that the various parts of the system and the various streams of policy and planning are relating properly with one another and doing their intended job for the public. Unless mediative planning accompanies executive, or action, planning the system risks either blowing up from resistant heat or running down to a point where under-capacity use will accommodate its faults.

Many of the acerbic comments made about the Department of Communications in interviews for this report, by people both inside and outside the DOC, bore out the view repeatedly expressed by the Communications Research Advisory Board that departmental planning lacked the element that we have here called mediative planning. Within the system, the burden of this shortcoming tends to fall on middle management, caught between what French called the "technocratic hubris" of their superiors and the "work-to-job-description" proclivities of those they are supposed to manage. Here is the way one middle- manager in the DOC put it:

> The Department is so wrapped up in projects that it's almost paralyzed in trying to see what it should be planning for. The lower levels are left with starting the planning exercise. But they do not get a clear idea from senior management of what it wants. Nothing goes down through the department reflecting what the Cabinet tells the Minister or the Deputy Minister we should emphasize. We're making it up as we go along.

Mediative planning should be able to describe the activities and policies of the department in relation to general government policy, complementary policies of other departments, and the trends, issues, and needs of society to which the activities and policies are intended to respond. It should be able to use this description for evaluation and forecasting in order to support "strategic planning", which involves the incorporation of mediative planning into the decision-making process. Mediative planning requires a certain detachment which, in itself, precludes the mediative planner from becoming too involved in the decision-making process he is required to serve. Mediative planning has to be seen as "non-threatening" and "user-friendly".

Conceptually, mediative planning can be regarded as part of the cost of "pluralistic" coordination mentioned at the end of the following discussion of the "distinction between amalgamated and pluralistic systems of coordination and decision" by Karl W. Deutsh (Deutsch et al., p. 65):

> Each such system, to have at least limited autonomy by itself, must have its own intake channels, its own memory storage facilities, its own decision area, its own output effectors, and its own external feedback circuits through information about the results of its past output that are returned to its subsequent input and thus may modify the system's further action.
>
> Pluralistic systems, then, are those in which two or more sub-systems, each of them autonomous in the sense thus described, are so linked together that some output signals from one enter as part of the input signals into the other, but where the memories, decision areas, and main feedback circuits of the sub-systems -- and thus their main decision-making facilities -- remain distinct. This usually will require a series of autonomous decisions in both sub-systems in order to maintain coordination between them.
>
> In the case of amalgamation, in contrast, some or all of the chief memory facilities, decision areas, and feedback circuits of the formerly autonomous sub-systems have become merged. A decision produced by these major merged facilities most often is then automatically a decision for the rudimentary sub-system, which may still have retained some minor or subsidiary autonomous functions. Such an overriding, or even directly effective, decision on the level of the higher system no longer requires any major decision on the sub-system level, except at most in regard to matters of implementation.
>
> Neither amalgamation nor pluralistic coordination may thus be cheap. In the case of amalgamation, the costs of coordination will have to be borne largely by the cost of creating and maintaining new, merged decision-making facilities. In the case of pluralism, the coordination will have to be met by the cost of retaining and, in fact, increasing the communicating and decision-making capabilities of the original components.

Whether systems in government are regarded as "amalgamated" or "pluralistic" will depend to some extent on the level or angle from which they are viewed. But in the Canadian way of doing things, it is difficult to think of systems that lean toward amalgamation rather than pluralism. In connection with the DOC, it has been suggested that Deutsch's pluralistic model should apply pretty fully to the association of a communication core and a culture core in the same department. Within these cores varying degrees of sub-system autonomy are needed to enable organizations to fulfill their functions and collaborate "horizontally" with related functional organizations both inside and outside the DOC. It is an important function of mediative planning to understand and describe these relationship, and to have the same understanding of them as the decision-makers and clients who are concerned with them.

At present the DOC is regarded, not so much as a pluralistic system, but as a non-coherent system. One business executive who has been a close observer of the department said:

> There is no hope for the DOC doing transmission policy or any other policy role as a little bunch of fiefdoms worried about their budgets. And if you're going to let the CRTC do policy, I don't see why you need the DOC. But, in fact, there are functions in communications that only government can perform and I don't see DOC performing them. I don't believe in all of its existence the DOC has actually created a policy of any kind, compared to what the CRTC has done.

Work Plan (1): Wordplay

The notion behind this preparatory report for the Special Planning Advisor was that it might serve as the beginnings of a Work Plan for this fourth attempt to build comprehensive planning into the operation of the DOC, the

previous attempts having been the initial planning exercise, the focal point apparatus, and the planning secretariat, all of which we saw biting the dust in chapter 1. If we think of the concoction of this report as having been something of a mediative exercise in itself, we could use it to try to bring together some of the programs, policies, and strategic thinking already going on in the Department with the various critiques we have heard and the "trends and issues" in communications. Let us start with a word-association summary. THe buzz-words of communication in recent times have been: instant, pervasive, erosive, blurring, integrative, centralizing, interactive, dispersive, fragmenting, decentralizing, transformative, and global.

The first word, "instant", gives the unfortunate impression that electronic transmission is moving faster than it used to and can produce a new information world -- just add boiling water and stir -- quickly. It is of course the volume and variety in which information can be recorded, stored, and transmitted at the same old "instant" speed of light that is important. Perhaps the Telecommission should have foresworn the catchy title, Instant World. and settled for one of the more prosaic titles that was suggested (Gotlieb and Gwyn, p. 96), Connect; Inter-Connect; Dis-connect. For there are no instant information-people for the information society. The new meaning of being "well-informed" will take some time to work out.

The "pervasiveness" of new communications and information technology is already apparent in working life, education and some aspects of

entertainment. But pervasiveness in general domestic life is still to come. People have long had a sense of the pervasiveness of mass communications and may be less amazed, more demanding, about new communication techniques than many of its progenitors thought.

The new communications are thought of as being "erosive" because they wear down the edges of definition, giving old words new meaning or depriving them of some of their meaning. This is critical for Parliament and government, because law and regulation depend on definition. As such statutes as the Broadcasting Act are robbed of sense by onrushing technology, so power passes from Parliament to those entitled by commission or omission to put what interpretation upon it they please. Statutes of broad intent, such as the Act respecting the Department of Communications, wear better than statutes of rather detailed prescription, such as the proposed Act respecting telecommunications in Canada, of 1978, which already has a dated look about it. The emerging solution appears to be that not only legislation, but regulation as well, must become in certain policy areas subject to parliamentary approval, perhaps with considerable delegation to parliamentary committees. In that way, Parliament can pass legislation of broad intent but not lose control of important policy-making power to be wielded by order-in-council or regulatory bodies.

The "blurring" of distinctions between the services offered by different communication techniques, most strikingly illustrated by the fact

that print is becoming an electronic mass medium, contributes to "erosion". For example, centuries went into the battle for a "free press", meaning no censorship prior to publication and no infringement of publication except under generally applicable laws governing all citizens, such as the various forms of libel. But in passing from paper to screen, print -- if it is "broadcast" -- apparently falls under CRTC control over new services. Press freedom as it is understood in Canada has already been restricted by a CRTC decision banning a print real-estate listing service (it is regarded as "advertising", as of course it is) from a series of screenprint services approved for cable distribution. It is not yet clear whether broadcast print will also fall under regulatory authority as "programming" or whether it will continue to be regarded by the CRTC as a "non-programming" service. If it is considered to be "programming", it comes under additional Broadcast Act guidelines for CRTC supervision and regulation, no small matter now that a "print CBC" is appearing experimentally in the form of a teletext service.

The new communications are called "integrative" because of their tendency to make people and organizations more interdependent once they are plugged in. The extent of the interdependence is often emphasized by use of the word synergism, borrowed from biology and meaning "combined action or operation (as of muscles)" (Webster). Like any organic or technological analogy applied to social systems, synergy can rather easily lead to totalitarian concepts and should make us beware of, for example, equating culture and communication with communication technology. One can always think of plenty of things, people, and organizations with which one would just as soon not be synergistic.

The integrative possibilities of the new technology make many fear that it could support "centralizing" tendencies, if not the ultimate synergy. The local becomes more dependent on the regional, the regional on the national, and, in Canada's case, the national on United States sources of services and equipment and software. Canada's internal and external vulnerabilities are exacerbated.

The increasing "interactive" potential of telematics, analogous to today's telephone but contrasting with broadcast or circulated media such as radio or television programming and newspaper or magazine journalism, would appear to reduce any centralizing "bias" inherent in new communications technology so long as authorities do not use it in a centralizing way. That is, the "interactivity" can be horizontal, or bottom-up, just as well as top-down.

The steadily increasing power, capacity, and cheapness of the microcomputer contributes to the "dispersive" capabilities of the new technology, reducing fears of dependency on computer utilities that would have to be publicly owned on the grounds of protecting citizens from main-frame mis-use. Stand-alone capacity can foster autonomy, and periods of "dis-connect".

The anti-integrative possibilities of the new communications are also represented by "fragmentation", as in the fragmenting of television audiences and the decline of the relative importance of the big networks owing to the multiplication of channels and the arrival of new kinds of services. To some extent the CRTC has served as a brake on this movement

owing to its concern with protecting the revenue base of licencees. It has also shown concern that "diversity of source" be genuine rather than represent different product lines of concentrated enterprise. A third concern is that in new "fragmented" services, as in old network services, U.S. producers will regard Canada as an incremental, rather than a cost-recovery, market, in effect dumping cultural product and putting Canadian enterprise at a competitive disadvantage. This challenge has led to consideration of a broader range of services that could be offered by the Canadian Broadcasting Corporation, or a broader range of publicly-owned arm's length enterprises to provide services, or fiscal and regularory measures to assure a place for Canadian content and a chance for it to grow, or all three.

Depending on policies pursued in the public and private sectors, the new communications may thus be "decentralizing". Within Canada, the old sense that electronic communications programming or services that were not under the auspices of federal regulation would somehow be destructive of Canadian cohesion has given way, to some extent, to a sense that variety of sources and inputs -- a country of mutually supportive complementarities -- is more conducive to the strength of the national community. But embedded in that idea, and in the Constitution, is the sense that Canadian pluralism and decentralization must nevertheless be part of a coherent structure which enables the parts of the country to share one another's strengths and partake of the strengths of the whole. This report has suggested that federal planning, intervention, and regulatory authority in national transmission networks are, paradoxically, not strong enough to assure the benefits of decentralization, pluralism, and complementarity.

Whether new means of communication are centralizing or decentralizing, integrative or fragmenting, or produce each of these effects in different ways, no one could deny that they are to some extent "transformative". They are working transformations in the way information is gathered, stored, and distributed, and in the way governments, schools, business offices, newspapers and a host of other activities are operated.

The radicalness of the transformation in social and individual behavior to be expected from the spread of telematics and informatics may have been exaggerated, however, by writers who have not paid enough attention to the considerable transformation already wrought by the age of mass media and telephone communication. At the extreme, as in Alvin Toffler's The Third Wave, they predict a transformation of global civilization between their youth and old age. Inevitably this kind of "globaloney" -- to borrow Clare Boothe Luce's term -- is part of the environment that has to be taken into account in mediative planning. But one must resist the hyperbole of viewing the DOC as "shepherding the nation and its people into the information age, preparing and guiding the country into a new world already forming" (Annual Information Plan 1982/83, p. 1). As shepherd, the DOC may have trouble rounding up sheep.

Work Plan (2): Communication

From the rather general considerations of the preceding section we will move to a possible order of priorities for the attention of mediative planning, first on the communication side, then on the cultural.

1. Industrial policy. In view of the state of the economy and the state of the DOC, industrial policy appears to be the obvious first concern. The government's optimistic resource-based projection of economic development, issued in 1981, has turned out, as economic projections often do, to be wrong, and its relegation of high-tech to third priority to be highly questionable. Indications are that the government today intends to press an employment policy made possible by restraining inflation; inevitably the telematics and other high-tech sectors will have higher priority than they did last time around, if only because of the fizzling of some of the resource megaprojects.

The DOC has a wealth of competence and expertise to bring to bear on the shaping of job-producing, job-enhancing, industry-stimulating policies. In the two broad areas of transmission structure and capability, and of "downstream" telematics applications in hardware and software, identified as priority concerns by the von Baeyer task force a decade ago, the department should be able to identify promising policy lines with much greater precision. A number of studies have been commissioned, some still under way, to improve the statistical database, create a framework for economic development policy, provide information on transborder data flows, and assess the future of direct broadcast satellites.

The other priorities listed below all relate to industrial policy.

2. Canada-United States. It should be recognized in planning that when Canada thinks internationally it has to think particularly of the Canada-U.S. community, which is de facto a closer-knit economic -- and communications -- community than the European Economic Community, though without benefit of formal political institutions. Whether the absence of such institutions contributes to Canadian autonomy or to Canada's gradual absorption is another question, outside the scope of this study. But as all the studies on Canadian communications make clear, there is a special communications relationship between Canada and the United States which is not shared by either of those two countries with any other country. This relationship should be handled in such a way as to help Canada obtain overseas markets; but there is no doubt that when studies speak of the essentiality of Canada's reaching "global" markets, owing to the smallness of its own, what they are mainly talking about is the United States market.

3. French-English. Studies for and by the Department of Communications, as well as DOC policy papers, fail on the whole to distinguish between the particular attributes and problems pertaining to the industrial base and market peculiar to the French community on the one hand and the English on the other. The geography and demographics of the two communites are different and some differentials in policy treatment may be appropriate. It is more divisive to sweep differences under the rug and aspire to homogeneous national policies than it is to recognize differences and accommodate them. It is notable that Québec is embarking on a planning exercise designed to produce a microelectronics and communications policy by the fall of 1983 (Le Devoir, 11 September 1982, p. 16).

4. Telematics. In devoting an inordinate share of limited resources to the Telidon videotex project, the DOC has cannibalized its own research sector, disobliged a large segment of its natural constituency, and given the department a skewed view of priorities in industrial policy. On the other hand, the program has given Canada a world position in videotex, fostered an international competitive view, focused attention on the way in which telematics will be of greatest eventual import to the general public, and stimulated a good deal of industrial activity through technology transfer, support of trials, industrial aid, and market promotion.

The Telidon program, the Office Communication Systems Program, and the operation of the Government Telecommunications Agency raise in an acute way questions relating to the role, mandate, and mission of the DOC.

In order to carry out its natural role as focal point for the public interest in communications, the department benefits greatly from its operational roles in research and development, spectrum management, the management and advisory function in all government telecommunications, and the communications satellite program. The DOC is a department of expertise and this expertise gives weight to its policy-making role, which is largely a standard-setting role. The DOC has the kind of capability needed to deal expertly with the kinds of problems raised in the previous section in connection with words like instant, pervasive, blurring, integrative, centralizing, interactive, dispersive, fragmenting, decentralizing, transformative, global.

But if the DOC ties itself too closely to particular projects and systems, by becoming the responsible director of their industrial development and promotion, it risks losing credibility and capacity as a balanced focal point. It will be seen as playing favorites and doing jobs for which neither its mandate nor its capabilities suit it. Mediative planning should be part of a review of the departmental role in telematics and industrial policy.

5. Ergonomics. Much debate occurs over the issue that the DOC is "technology driven" when it should be "market driven". But neither technology nor market are actual or desirable "invisible hands" to be driving the DOC. Who and what drives technology? Who and what drives the market? If the market were really regarded as a benign automaton, there would be no combines branch, no consumer and corporate affairs department, no pooling of resources, and so on. In the mixed economy, as Professor Meisel observed, votes as well as dollars count in registering preferences. And in the technological economy, the expert can often brandish supposed technological imperatives which are actually personal preferences and relate neither to consumer preferences nor voter preferences. The job of ergonomics is to relate the machine to the potential user. The impression is left from interviews inside and outside the DOC that social and behavioral research, the crucial business of relating technology to user needs, has been strained for resources and too narrowly focused on the Telidon project. In the industrial drive for jobs, productivity, and renewed economic growth, ergonomics will supply the social balance wheel to see that people are not locked into closed systems or stuck with inadequate equipment and software that neglects the human factor.

Work Plan (3): Culture

It is perhaps idle to suggest priorities for mediative planning relating to the cultural sector without having the benefit of the major planning exercise that has been carried out in this area. However, I will summarize some points made in this report.

1. Form. The conceptual and organizational basis for associating culture and communications in the same department need to be reworked. They are at present based on a "unified field" theory that is untenable.

2. In culture, as in communication, it may well be that the planning priority should be on the commercial side. Again, we have to see what Applebaum-Hébert has to say; but the structure for aiding the creative arts, with its distinct service agencies at arm's length from government, is not something one would want to redesign lightly. It is the commercial base of popular culture that is in greatest need of attention. In particular, the failure of Canada to protect and develop a commercial film industry, and its seeming inability to prevent most of the domestic book publishing industry from going down the drain, are urgent matters if Canadians really want a "place to stand and a place to grow", to borrow the words of the Ontario song.

In considering cultural "industrial policy", it may be just as important to take into account Canada-U.S. relations, and more important to take into account French-English relations. But many of the criteria are

APPENDIX I

Criteria for a work program for policy analysis

(From Branching Out: Report of the Canadian Computer/Communications Task Force Volume 1; May, 1972; page 26.)

1. Establishing effective Canadian problem-solving and decision-making capacity, by (i) optimizing data-processing power and access to data wherever stored, and (ii) fostering improvements in data collection, processing dissemination, and utilization.

2. Protection of national sovereignty, by (i) maintaining control over data essential to Canada, and by (ii) fostering the growth of Canadian-owned and/or controlled firms, and the growth of Canadian skills in the computer/communications field.

3. Protection of Canadians from unwarranted intrustions into the life of the individual by the computer.

4. Promotion of regional development by (i) ensuring the availability of data to all areas of Canada at costs which are not prohibitive, and (ii) providing opportunities for special computer/communications facilities in the less-developed areas of Canada.

5. Rationalization of system structure and design, by (i) avoiding excessive systems cost and unnecessary duplication of facilities, and (ii) avoiding unnecessary obsolescence of useful equipment and unreasonable demands on organizations with obligations of a higher national priority.

6. Utilization of private initiative and resource allocation processes, by (i) fostering a competitive environment and (ii) maintaining or introducing restrictions against unfair competition.

7. Rationalization of the role of government by (i) ensuring that administrative or legislative policy-making is coherent and practical, (ii) ensuring that no major policy changes are implemented without due process, and (iii) ensuring that adequate jurisdiction and capability resides in the agencies or institutions charged with implementing government policy.

8. Optimization of national resource allocation by government, so as to ensure that resources applied to computer/communications are not misallocated to sectors that are low in social priority.

9. Ensuring acceptance of computer/communications technology by interest groups and Canadian society by (i) avoiding censorship of ideas, and (ii) providing for adequate participation in the decision-making process by the groups affected.

10. Promotion of international co-operation in computer/communications by (i) facilitating international technical compatibility, (ii) participating in international councils, attending international forums, and exchanging information, and (iii) providing Canadian skills and resources to developing countries when requested.

APPENDIX II

Policy issues in communications

(From Toward a Policy Framework for the Economic Development of the Communications/information Sector, by Price Waterhouse Associates, Nov. 30, 1981; pp. 163-167.)

Some Recurring Themes

In the preceding chapters, we set out the issues which we see on a subsector by sub-sector basis. However, there are five themes whose importance crosses sector boundaries. These are discussed below.

1. Rationalization/competition

We do not see any single answer as to the degree of concentration which is appropriate in this sector. There are parts of the sector where international trade is a major factor, such as telecommunications equipment, EDP and other office automation equipment, program production and book publishing. In these industries, imports will always provide a choice for consumers, and one would therefore incline to a policy of rationalization to create a few Canadian-based companies which have the scale and the financial strength to invest in research and development, to sell aggressively on a world scale and to produce efficiently.

obviously different from those to be applied in industrial policy relating to communication facilities. We can't think of cultural trade-offs in the same way as industrial trade-offs. We can't think of French Canada and English Canada as each having the same cultural relationship with other countries, the United States, France, and Britain, in particular. We have to think of Québec as having a more embracing cultural policy role toward French Canadian culture than any one province has toward English Canadian culture. Competition policy in relation to cultural enterprises goes beyond competition policy in relation to other enterprises since it must take into account the criteria of freedom of expression and the desirability of a diversity of sources of information and opinion.

3. Regulation. The pips have been squeaking for some time in the regulatory process. In relation to the potential of new communications technology, the CRTC seems to be rather in the position of the man who, at the beginning of the automobile age, was required to go ahead of the machine at night, bearing a lamp, to warn of its coming.

As already observed, in the present flux and secrecy of government cultural-policy planning, it seems bootless to fire more crackers into the thunderstorm. One can but hope that mediative planning advice may serve to keep damages to a minimum.

The Non-planning Planner

In one of its most helpful observations, the Ide-MacLean report said (Ide-MacLean, p. 9): "Planning is not a formal discipline with accepted standards."

In final form a plan is a decision, and in that sense planners don't plan, decision-makers do; the planners assist the decision-makers.

The idea of having a Special Planning Adviser and mediative planning in the DOC is to make sure the executive planning process responds to as nearly correct a general account as possible of the elements with which planning has to deal. If we substitute the Department of Communications and its policies, programs and activities for the universe, an adaptation of C.E.M. Joad's definition of philosophy appears to be pretty much what the DOC has in mind for mediative planning (Joad, p. 17):

> Philosophy is, I think, most appropriately to be conceived as a clearing house to which the results of all other human inquiries are brought and in which the records of all forms of human experience are sifted, assessed and evaluated.

The idea of the DOC's having a philosophy may seem a bit far-fetched, but, toute proportion gardée, that seems to be the nub of it.

Smaller companies may tend to be more creative, either technically or artistically, and may be able to succeed for a time in a particular market niche. To prosper in the long term, however, they will generally have to either grow and broaden their product line, or be bought up by larger firms. They are also likely to require more intensive step-by-step support from government, rather than being able to "take the ball and run with it".

One alternative is simply to leave rationalization to the market place, subject perhaps to limitations on foreign takeovers. To the extend that the government provides any form of selective assistance to the sector, however, it will have to decide who is to receive it. To say that decisions will be made on a case-by-case basis is to ignore the need for some general principles which can be referred to in making those decisions.

There are other parts of the sector where trade is much less of a factor, particularly in carriage. In these industries, the general principle would seem to be to encourage greater competition to ensure that customer needs are met effectively and at minimum cost. However, the application of such a philosophy is complicated because a single network may be far more economical in certain contexts, and because of existing practices such as cross-subsidization. Moreover, new services such as videotex involve major requirements for content, equipment and software, so that trade considerations do have some relevance.

2. Picking winners

In any situation where broad stimulative measures seem likely to be either insufficient or overly costly, discussion of economic development policy inevitably comes back to the need for government to select a limited number of "winners", be they products, product lines or firms, on which it will concentrate its support. There is also a tendency to feel that, in new product lines which appear to have natural monopoly characteristics, an impartial arbiter such as the government should step in to avoid wasteful jockeying for the market and to ensure that a potentially lucrative new industry does not "fall into the wrong hands".

However, picking winners in this sector is extremely difficult. There is a great deal of uncertainty about the technological feasibility, long-term cost and market acceptance of new products, despite the aura of certainty which their promoters may project. Selection of content with market appeal is far from easy either. A partial answer is that government should not commit too large a proportion of its resources to any one project, and should review its commitments periodically.

There is also a very real danger that, despite good intentions, the choices made by government will be influenced:

- more by technological glamour than real market prospects;
- more by perceived social and cultural benefits and problems than commercial feasibility; and

- more by politically influential vested interests, or newcomers with a politically attractive story, than by the needs of the economy.

Policy makers must be constantly on guard against these risks.

Governments are also faced with the political and ethical problem that in picking winners they may be conferring an undue benefit on certain firms or individuals. However, this is more a matter of structuring arrangements so that the government shares in the rewards as well as the risks.

One possible approach is to fund research and development efforts on a fairly broad basis, provided that the product is reasonably credible, but to restrict assistance in marketing and production start-up to firms which have a track record of commercial success or can demonstrate their ability to attract capital from other sources as well.

3. Multinationals/Canadian firms

The question of whether to rely on multinationals or on Canadian-based firms for the development of the sector is also difficult. The track record of multinationals in the sector is not encouraging. In most of the equipment sub-sector and in content, their Canadian operations have been oriented more to distribution than production, let alone development. IBM is one of the few companies to have respected the "rationalization" policy of the Department of Industry, Trade and Commerce, but even it has done so by manufacturing relatively low technology products such as typewriters in Canada to offset imports of mainframe computers.

On the other hand, there would be significant advantages if the Canadian subsidiaries of multinational corporations were able to obtain genuine world product mandates covering research and development, as well as manufacturing for specific high technology products or product lines in Canada. We could then benefit from the multinational's reputation, worldwide marketing network, financial strength and its research and development in related areas. The question is whether it is realistic to expect full responsibility for new product lines critical to a firm's future to be delegated to the Canadian subsidiary? Moreover, can we rely upon such delegation to continue?

We should also be realistic enough to see that Canadian-based firms which succeed in export-oriented industries are likely to establish substantial facilities outside the country, becoming multinationals themselves. This may be in response to advantages either in marketing or costs of production and distribution. Canada can hope for continuing economic benefits from head office and development activities, but it cannot expect that the full process will remain here.

Despite these considerations, the general rule should be to focus support on Canadian-based companies and to maintain Canadian control over emerging firms. This approach provides greater assurance that technology developed in Canada will be applied to manufacture products here. In content production, it provides greater assurance that efforts will be made to develop and market content of Canadian origin. Opportunities for mutually beneficial collaboration with multinationals should not, however, be excluded.

4. Protection

Protection of the Canadian market for most communications/information products and services is not a viable approach because:

- we cannot afford to deny Canadian business users access to critical technology at competitive prices;
- Canadian consumers are accustomed to having a broad choice of expensively-produced content, and would not accept limitations on the choice available; and
- in some sectors, such as computer processing and software packages, traditional protective measures such as tariffs and quotas would be extraordinarily difficult to enforce for technical reasons.

Policy must therefore focus in most cases on strengthening Canadian industry so that it can compete more effectively, rather than protecting it.

5. Specialization

Another fundamental constraint, which flows from the fact that Canada is a relatively small factor in a worldwide or North American market, is that we must specialize in order to succeed. High up-front costs for research, development, marketing and production start-up give large-scale operations an important advantage. A small country can only achieve this scale if it has industries which are specialized, export oriented and generally outside the area in which major countries have already established a strong position.

APPENDIX III

Research proposals

(From Toward a Policy Framework for the Economic Development of the Communications/Information Sector, by Price Waterhouse Associates, Nov. 30, 1981; pp. 155-157.)

A sound economic development policy would be greatly aided by whatever insight can be gained into:

- the institutional arrangements necessary to provide reasonable protection for both consumer and business interests in transaction systems such as electronic funds transfer or tele-banking, tele-shopping or travel reservations, and their impact on the cost of such systems and the time required to develop and implement them;
- the probable operating cost of such transaction systems compared to conventional alternatives such as cheques, catalogue shopping by mail or telephone and the use of travel agents;
- the probable sales impact of such transaction systems, i.e. will impulse buying be more or less common if people shop via home terminals rather than in person;
- consumer readiness to use such systems, i.e. will the convenience and possible cost savings of electronic systems be sufficient to outweigh their unfamiliarity and the loss of social contact;
- the number and proportion of business activities where the interconnection of various types of equipment would be a significant advantage;
- the probable relative cost of integrated as opposed to stand-alone systems, e.g. is it really more economic to have a word processor linked to a copier so that it can transmit text directly, rather than having the word processor print an original to be fed into the copier or, as a compromise solution, produce a diskette which the copier could read;

- the probable relative cost of managers interacting directly with sophisticated office equipment compared to using support staff, e.g. learning to edit a text at a word processor rather than having a secretary do it. These questions must be addressed in terms of comparative advantage, quite apart from the sociological barriers which might have to be overcome;

- the probable relative cost of different carriage media (paired wires, coaxial cable, fibre optic cable, satellite transmission, physical delivery, and so forth) for different types of traffic individually and for different groupings of services. These questions should be addressed in terms of both local and long-distance traffic;

- the technical feasibility of moving from the present architecture of carriage systems to a new architecture which might be more attractive in the long run given the carriage media and switching systems now available and the services which may be provided;

- the probable relative cost and market appeal of various methods of transmitting audio-visual material, such as conventional broadcasting, pay television, cable-satellite systems, direct broadcasting by satellite, videocassette rental or purchase, and videodisc rental or purchase. The purpose would be to identify:

  - which methods are dominated by others, or in other words, which are likely to be more expensive without any significant service advantage; and

  - which methods may be attractive only for specific markets, either geographic or in terms of the type of material.

There is also a role for research, whether sponsored by government or industry, on opportunities in the general field of content. Topics which might be addressed include:

- the actual and potential size and Canada's current position in various "niches" in worldwide content markets other than high-cost mass-appeal entertainment. Areas to be studied might include programming and books for children, how-to-do-it material, scientific subjects and language learning;

- market opportunities in software for home computers, including educational, as well as entertainment applications; and

- potential new applications for electronic information services, particularly in business markets.

REFERENCES

Annual Information Plan, 1982-83, DOC Information Services, 1982.

Annual Review of Telecommunications in the Government of Canada, 1980-81, Government Telecommunications Agency, DOC, (Supply and Services Canada, 1982).

Babe, Robert E., Canadian Broadcasting Structure, Performance and Regulation, Economic Council of Canada, (Supply and Services Canada, 1979).

Berger, Carl, The Sense of Power: Studies in the Ideas of Canadian Imperialism, 1867-1914, (University of Toronto Press, 1970).

Branching Out, Vol. 1, Report of the Canadian Computer/Communications Task Force, H.J. von Baeyer, chairman, (Information Canada, 1972).

Canadian Radio-television and Telecommunications Commission, Balance in Broadcasting, document, 1981.

Canadian Radio-television and Telecommunications Commission, Decision on Pay-TV, document, March 18, 1982.

Communications Research Advisory Board, Reports for 1980-81, 1981-82, (Supply and Services Canada).

Communications: Some Federal Proposals, Government of Canada, (Information Canada, 1975).

Concept paper on proposed planning and control cycle, DOC memorandum, September 21, 1979.

Computer/Communications Policy: A Position Statement by the Government of Canada, (Information Canada, 1973).

Deutsch, Karl W., et al, The Integration of Political Communities, (J.B. Lippincott, 1964).

Le Devoir, "Un Sommet sur les nouvelles technologies," September 11, 1982, Montréal.

The Electronic Office in Canada, DOC, (Supply and Services Canada, 1982).

Ellul, Jacques, The Technological Society, (Vintage, 1964).

Federal Cultural Policy Review Committee, Summary of Briefs and Hearings, (L. Applebaum, J. Hébert, chairmen), DOC Information Services, (Supply and Services Canada, 1982).

Feeley, James, "Home Computing/Videotex: A North American Perspective", paper, 1982.

French, Richard, D., How Ottawa Decides: Planning and Industrial Policy-Making, 1968-1980, Canadian Institute for Economic Policy, (James Lorimer, 1980).

Globe and Mail, Toronto, "Study Urges Broadcast Policy Changes," by Dan Westell, August 11, 1982.

Gotlieb, Allan E. and Gwyn, Richard J., "Social Planning of Communications" in Communications in Canadian Society, Benjamin D. Singer, ed., (Copp Clark, Toronto, 1975).

Granatstein, J.L., The Ottawa Men, the Civil Service Mandarins 1935-1957, (Oxford University Press, 1982).

Guide to the Policy and Expenditure Management System, 1980, Treasury Board, 1980.

Ide, Ran and MacLean, Don, Planning in the Department of Communications, a report to the Deputy Minister, DOC paper, 1981.

Instant World, A report on Telecommunications in Canada for the Telecommission, Allan Gotlieb, chairman, Henry Hindley, executive director, (Information Canada, 1971).

Joad, C.E.M., Philosophy, (Premier, N.Y., 1962).

Kidder, Tracy, The Soul of a New Machine, (Atlantic Little Brown, Boston, 1981).

Litvak, Isaiah and Maule, Christopher, Cultural Sovereignty: The Time and Reader's Digest Case in Canada, (Praeger, N.Y., 1974).

Madden, John, "Julia's Dilemma" in Gutenberg 2, edited by Dave Godfrey and Douglas Parkhill, (Press Porcepic, Toronto, 1979).

Meisel, John, Chairman of the CRTC, speeches.

Parkhill, Douglas, The Challenge of the Computer Utility, (Addison-Wesley Publishing, Don Mills, Ontario, 1966).

Privacy and Computers, R.J. Gwyn and E.R. Olson, co-directors, task force report, Departments of Communications and Justice, (Information Canada, 1972).

Proposals for a Communications Policy for Canada: A Position Paper of the Government of Canada, (Information Canada, 1973).

Price Waterhouse Associates, Toward A Policy Framework for the Economic Development of the Communications/Information Sector, 1981, report to the Communications Economics Branch, DOC.

Royal Commission on Newspapers, Report and research studies, Vols. 1, 4 and 8, (Supply and Services Canada, 1981).

Strategic Overview(s), DOC, March 31, 1981 and March 31, 1982.

Telecommunications and Canada, Consultative Committee on the Implications of Telecommunications for Canadian Sovereignty, Hon. J.V. Clyne, chairman, (Supply and Services Canada, 1979).

The 1980s: A Decade of Diversity -- Broadcasting, Satellites and Pay-TV, comittee report to CRTC, Réal Therrien, chairman, (Supply and Services Canada, 1980).

Toffler, Alvin, The Third Wave, (Bantam, 1980).