TECHNOLOGY ASSESSMENT AND REGULATORY PROCESSES IN CANADA: IMPLICATIONS FOR THE "MAKE OR BUY" POLICY AND FOR REGULATORY REFORM.

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INTRODUCTION

The objective of this study is to report on ways of assisting the development of better:

1. structures and approaches by which regulatory units of government might assess technology in the policy spheres and sectors which they regulate, and
2. criteria for determining the appropriate amount of in-house (as opposed to external contracted out research) needed to support the regulatory and related technology assessment functions.

The study would begin an exploration of these two related issues by examining, very broadly, six regulatory units of the Government of Canada, the National Energy Board (NEB), the Canadian Radio and Television Commission (CRTC), the Canadian Transportation Commission (CTC), and the related Departments of Energy, Mines and Resources (EMR), Communications (DOC) and the Ministry of Transport (MOT).

It is important to stress that the initial methodology and sources for this study were three-fold. The study was to be based on: 1.) existing published literature and documents on regulatory processes and technology assessment; 2.) confidential interviews with officials of the six selected agencies; and 3.) confidential interviews with spokesmen of the companies and other interested groups which constitute the constituency or clientel of the six agencies. Because of this approach the focus of the study would be on "describing current practice and attitudes towards these two related issues".

At the end of July, 1972, after two months work assembling and examining some of the literature, the Ministry of State for Science and Technology (MOSST) cancelled the project without notice before any of the interviews had begun. It was felt by MOSST that the interviews would be "premature". Hence this report represents a very partial and incomplete analysis of the "practices and attitudes" towards the two issues originally agreed upon. Indeed, because of the elimination of the interview phases, and because the literature phase was not fully completed at the time of cancellation, this study cannot pretend to have studied "attitudes" in any systematic way at all. It is basically a report on, and analysis of some existing literature and documents.

Despite this somewhat confined and truncated methodology it is hoped that this report can shed some light on the important issues at hand by presenting an analysis and synthesis of the literature and documents collected during the two month period.

The basic rationale for developing a broad understanding of the possible relationships between technology assessment, regulatory processes and the MOSST "Make or Buy" contracting-out policy is still valid despite the methodological amendments made to the study. This rationale can be stated fairly compactly. It presents the basic reasons why the study was commissioned and it will introduce the main issues to be explored in the rest of the report.

The primary focus of recent Canadian science policy (and indeed public policy) analysis has been on the expenditure side of government activity. Relatively little emphasis or study has been devoted to the "other half" of the reality of government, namely its regulatory policy activity. And even less emphasis has been given to the relationships between regulatory activity and expenditure activity.[1] In the science and technology policy field the place of the regulatory unit is of growing importance in relation to two current and future aspects of science and technology policy, both of which fundamentally effect the industrial or other sectors which are the objects of regulation. The two aspects are:

1. technology assessment processes, and
2. the amount and suitability of research needed to support the regulatory function and how much, if any, ought to be carried out outside of government research units.

Technology assessment is ultimately related to the kinds of governmental and political structures that exist, or ought to be created, to facilitate a more complete and humane assessment of both the beneficial and the harmful effects of new technology. Such structures and processes must be examined both in terms of democratic governmental concepts, including recent proposals for more meaningful "adversary" processes and participation, and in terms of the regulatory units' need for reliability, speed and predictability in its decision-making relationships with its constituents.

Similarly, a balanced assessment must be made of the kinds of criteria used to determine the appropriate amount of"in-house" versus contracted-out research in the regulatory area. The recent MOSST "Make or Buy" policy has already indicated that research in support of regulatory activity is one area where research should be done in-house.[2] However, when related to the concept of technology assessment, this may merely beg the larger question; What does one mean by regulatory activity in the contemporary Canadian context?

These are, admittedly, large and complex issues. The remaining parts of this report will seek to explore these issues. Parts I and II of the report will assess the concepts of "technology assessment" and "regulation" respectively. Part III will relate these concepts to recent developments in the six agencies selected as examples for this study. Part IV presents a critique of the "Make or Buy" science policy in the light of the technology assessment and regulatory concepts. Finally, Part V presents several observations with respect to future structures of technology assessment and to criteria of contracting out research, in the regulatory aspects of government.

I THE CONCEPT OF TECHNOLOGY ASSESSMENT

It is not surprising that a concept of technology assessment should arise. It is a logical outcome and evolution of a pattern of concern that was articulated in a variety of ways in the 1960's. The increased rate and pace of technological change prompted a concern that societies develop a greater capability to anticipate and foresee both the beneficial and the harmful consequences of technological change. In terms of basic motivation the concept of technology assessment can trace its origins to the same issues that prompted the articulation of other catch-all phrases of recent years, phrases such as "systems analysis", "science policy" and "policy sciences". Hence, at one and the same time, it is a concept which both benefits from the missionary fervor of its spokesmen and suffers from the conceptual fuzziness of all-encompassing phrases.

The phrase itself is usually attributed to American Congressman Emilio Q. Daddario who has promoted and conducted Congressional Hearings on the subject.[3] While the phrase may be new, the function of technology assessment has been carried out since time immemorial. What characterizes the current concern is the range of variables and criteria that are utilized to assess the effects of technology. As one writer has put it:

> Until recently, assessments were based on narrow considerations of technical efficacy and direct observable results. But our growing awareness of the pervasiveness of the impacts has led to the inclusion in the assessment process of the indirect social and environmental effects that often accompany new technology.[4]

It has been felt that the bias of current technology assessment processes in both the public and private sectors, has been overwhelmingly in the direction of assessing only the favorable consequences of technology. Hence, because of the need to balance the assessment processes, much of the discussion of technology assessment has been viewed by some as negative or anti-technology.

When a broad pervasive concept such as technology assessment arises and gains support it usually results in the creation of special kinds of public organization which symbolize and hopefully contribute to the solution of the issues involved. In the case of technology assessment, recent American and Canadian developments and proposals deserve attention. They will be briefly described and introduced here and will be examined more closely in subsequent parts of this report. The developments are basically of two types. The first is the proposed Congressional Office of Technology Assessment (OTA). The second development is the proposed Office of a Consumer Advocate (OCA). The first office represents a proposal that emanates largely from the professional technological community. The second proposal generally emanates from more grass-roots groups and from consumer advocates such as Ralph Nader. Both types of proposal are important if one is to assess the practical meaning of technology assessment generally, and its meaning in regulatory activity in particular.

In the United States Congress, a House of Representatives Bill to establish an Office of Technology Assessment (OTA) was passed in February 1972 and a similar bill received favourable Senate hearings in March 1972. The House bill would create a Technology Assessment Board of five Senators and five Representatives appointed by Congress. The Board would then hire a Director to supervise the staff (up to 100) and operate the office. The actual assessing would be done under contract to the OTA by suitable outside groups (industrial, non-profit, academic, ad hoc). The OTA would supplement advice provided by existing committee staffs, the Government Accounting Office and the Congressional Research Service. The OTA would be the first office that Congress has established for itself since the creation of the General Accounting Office in 1921.[5]

From Congressional testimony it is clear that the majority of spokesmen conceived of the OTA as contributing to a balanced objective assessment of technology. It would not be just a negative policeman of technology. Rather, in the words of Philip Handler, president of the National Academy of Sciences, "It should have the power to turn on needed technologies as well as turn them off ".[6]

The proposals for an Office of the Consumer Advocate have come from both branches of the American Congress during the past two years. The Consumer Advocate would be appointed by the President with the consent of the Senate, and would represent consumer interest as a party before regulatory agencies.

Current debate centres on how extensive the powers of the Office should be.[7]

Two points about the Consumer Advocate concept seem relatively clear. First, in one sense it is concerned with a wider range of issues than just technologically-related questions. But the impact of technologically-related questions are central to its concern. The second point is that the proponents of the OCA do not generally view it as a body that will be itself objective and balanced in its view. It will be an <u>advocate</u> of the consumer interest.

While there appear to be no parallel proposals for a Canadian Office of Technology Assessment, there have been proposals for a Consumer Advocate office.[8] The concept of technology assessment and related consumer advocacy concepts reflect a concern that our current approaches and organizations are inadequate. The solutions, it is admitted, are not to be found just in creating new "objective" assessment bodies or new "advocate" bodies but it is felt that they are important parts of the total effort which societies must make.

Several central issues of public policy and political organization emerge out of the technology assessment concept. They are also introduced here briefly and will be discussed more explicitly later.

1. There are clearly difficulties with respect to the quality and quantity of information needed to make such assessments. It is particularly difficult to acquire in advance

information about new technologies being developed by private corporate decision-makers. These difficulties in the Canadian case may be compounded by the multi-national corporation origins of much of our new technology.[9]

2. Is there any viable distinction between <u>technology</u> assessment and <u>political</u> assessment? At the centre of viable technology assessment processes must be an understanding of the structures of real political power in the making of such decisions. In the Canadian context this implies an understanding of the Canadian Cabinet system of government, before one rushes headlong into an unquestioning transplantation of American models such as an OTA or OCA.

3. The technology assessment concept has resulted in charges that it will "institutionalize conservatism" in social decision-making.[10] Such charges basically raise the twin questions of how much <u>time</u> a society is prepared to take in its public decision-making processes and how much it is prepared to permit currently non-participating groups and sectors the opportunity to share in such decision-making processes.

It is clear that each of the above issues have been central to recent assessments of the concepts and processes of regulation. It is to a discussion of the concept of regulation that we now turn.

II THE CONCEPT OF REGULATION

How narrowly or how widely one conceives of the regulatory function is the key question in analyzing both the technology assessment and the "Make or Buy" contracting out issues. It is also important to distinguish, at least initially, the regulatory function of government from the regulatory units (of which there are several types) which perform that function. This section of the report will first examine the regulatory function before assessing the types of regulatory unit or structure. Finally, this section will analyze some apparent characteristics of on-going regulatory processes out of which have arisen several recent proposals for regulatory reform.

A) The Regulatory Function: The Search for Definition

On first glance, the political, legal and economic literature seems to treat the subject of regulation in widely disparate ways. This is partly because the literature, of necessity, examines in some detail both the regulatory function and specific regulatory units or organizations with the emphasis on the latter. The apparent lack of consensus also arises out of the different way in which regulatory values are accorded priority and importance.

For example the legal literature seems to concentrate on the important value questions regarding administrative justice.[11] The economic literature has tended to focus on the impact of regulation on the pricing or rate-setting and related

investment behavior of regulated firms and industries. The concern has centred on whether regulation has in fact at least avoided the excesses of unregulated economic behavior, or, more positively, promoted viable competitive industrial activity.[12] The political literature has tended to focus on two related themes; first, the extent to which regulatory units have become the captives of the industries they were supposed to regulate and second, the extent to which delegated regulatory activity has been removed from any meaningful control by Parliaments or representative legislative institutions.[13]

On closer examination, however, each of these discipline bases seem to contribute an important element of the basic nature and characteristics of the regulatory function. By function is meant the empirical impact of <u>effect</u> of regulatory activity on individuals, groups and organizations. While in other sections we will refer specifically to a wider range of literature, the focus in this section will be on three main recent sources which seem especially germane to a broad understanding of the nature of the regulatory function. These three sources are the work of political scientist, Theodore Lowi, the Report of the Parliamentary Committee on Statutory Instruments headed by a lawyer, Mark MacGuigan, and a Brooking Institution economics symposium on Technological Change in Regulated Industries.[14]

While a number of political approaches to the question of regulation may be adopted, one in particular initially appears to have considerable analytical promise. The Lowi typology of public policy rests upon the preliminary assumption that

policies determine politics. Thus, the examination of policy formulation begins with an analysis of the different outputs of government policy and then attempts to establish systematic relationships between those outputs and differences in the processes from which they evolved. Theodore Lowi, in particular, has advanced the notion that different kinds of policy may be associated with quite distinctive political processes. Lowi views policy as "Deliberate coercion - statements attempting to set forth the purpose, the means, the subjects and the objects of coercion".[15]

The typology has value also because it conceives of policy in political terms. The political basis of policy activity deserves emphasis especially in the context of regulatory reform. Political scientists, for example, started out initially tending to define the state as that unit of society that exercises "legitimate coercion". More recently they have moved towards a wider, more open-ended definition of the political system as the system that authoritatively allocates values. In the course of this change the study of politics unfortunately tended to neglect a key element of the earlier definition -- that the state was ultimately based on the management and manipulation of legitimate coercion (the securing of acceptance and compliance). Theodore Lowi, among others, has very forcefully and correctly brought this back to our attention.[16] Hence, "policy is deliberate coercion -- statements attempting to set forth the purpose, the means, the subjects and the objects of coercion". Lowi was

referring, of course, to the exercise of legitimate coercion, on the assumption that the discussion was about democratic societies. The importance of this point is that it shows that political policy-making involves not just the allocation of values or the choosing of alternatives. It also involves the selection of various approaches and combinations to exercise the legitimate coercive powers of the state. To identify the purpose, the subjects, and the objects of legitimate coercion ultimately involves the selection of various approaches to securing social acceptance and/or compliance. It is <u>both</u> the choosing of goals and the choosing of compliance methods that is the basis of political policy making.

This directs our attention to the content of policy, the means selected to ensure compliance with the decisions of the state. Lowi posits that relationships among people are determined by their expectations, and that in politics these expectations are determined by government policies or outputs (including the substance and level of the outputs). Therefore, political relationships are determined by the type of policy at stake, and, as a result, for every type of policy there is likely to be a distinctive type of political relationship.-- After beginning with the definition of policy in terms of its expected impact on society, then one moves back to identifying the character of each of the political processes and power structures associated with each type of policy. Once again, the reasoning behind this approach is as follows: "Different

ways of coercing provide a set of parameters, a context, within which politics takes place".[17]

Lowi proposes four types of policy (forms of legitimate coercion) available to government, each with a corresponding arena of power characterized by a distinctive political process. The three types of relevance in this paper are: distributive policies; regulatory policies; and, redistributive policies. Each of these three types of policy manifests difference in both the likelihood and level of application of coercion and as a result develops its own characteristic political process. It is the process involved in each which is of interest here, especially in the way in which the regulatory function is characterized.

(1) Distributive Policies

These policies facilitate the disaggregation of resources into individual units, each of which may be dispensed in relative isolation from the others. Control over the application of such policies is decentralized and divorced from general rules. The fact that resources are treated, in the shortrun, as unlimited encourages a multiplicity of localized participants whose relationships are characterized by "log-rolling" -- that is, the individual decisions are unrelated, and the participants engage in mutual non-interference precisely because no communality is perceived in the individual acts of distribution. "When a billion-dollar issue can be disaggregated into many millions of nickel-dime items and each item can be

dealt with without regard to others, multiplication of interests and of access is inevitable and so is reduction of conflict".[18]

(2) Regulatory Policies

Like distributive policies, regulatory policies are specific and individual in their impact, encourage a multiplicity of participants, and are characterized by a decentralized process. However, unlike distributive policies they are not susceptible of the same degree of disaggregation since not all demands can be satiated. Hence, there must be some identification of the relative winners and losers. Instead, separate policy items must be co-ordinated by means of the application of a general rule to each individual decision. Regulatory decisions involve direct choices regarding the indulgence or deprivation of individuals resulting in direct confrontations between the indulged and the deprived on any particular issue. As a result, the participants in this political arena form competing groups which are organized around shared values and the process is characterized by bargaining among tangential interests attempting to influence policy through both conflict and compromise.

(3) Redistributive Policies

Redistributive policies, like regulative, involve co-ordinated application in which individual decisions must be interrelated. However, unlike the preceding two policy types, this form of coercion does not apply to individual behaviour directly but instead works through the environment within which

individual behaviour takes place, and by affecting the environment produces an impact upon the individual.[19] Redistributive policies effect a transfer of resources within a society and are characterized by centralized and hierarchical decision-making. In addition, they do not produce a multiplicity of competing groups, but instead encourage either the formation of broad-based coalitions or, in the absence or such coalescence, an elitist decision-making process which occurs in virtually an interest-free vaccuum.

The possible utility of Lowi's paradigm derives from its attempt to specify policy outputs and the expectations which they generate on the part of individuals, and the way in which both determine the politics of policy-making. Distributive and redistributive policies may be posed as two polar extremes on a continuum of process characteristics. The former is characterized by decentralization, access to the policy process, and a multiplicity of individual participants, none of whom perceive a shared interest in the policy because each output is unrelated to the others. Distributive outputs, then approach the complete privatization of public policy. Redistributive policies, on the other hand, are characterized by a centralized decisional locus, a highly structured (closed) policy process, and a reduction of group activity to the operation of broad coalitions united by the stakes involved in the policy.

Lowi's typology is of interest in at least two respects.

First it treats the regulatory function as a basic form of governing device involving very direct coercive activity, coercive activity that is perceived as such by the groups affected by or involved with such activity. Second, it compares and contrasts the regulatory type of governing with distributive expenditure and other outputs. These involve other ways -- sometimes alternative ways, sometimes complementary ways -- of securing compliance for desired policy outcomes. Any single policy field (be it energy, communications, transportation, for example) is likely to involve each of these basic compliance instruments.

However, recent approaches to improving policy analysis such as cost-benefit analysis have been concentrated almost entirely on the expenditure side of government. Hence it tends to leave out the other half of the reality of government which is the regulatory function. This in turn raises the question of the value and validity of the concept of so-called independent regulatory authorities or units. From what are they, or should they be, independent? Independent from politicians? Why? Independent from corresponding departments and units with distributive and expenditure roles? Why? What is the appropriate political position of regulatory units when the regulatory function is examined in this elementary but important fashion?

One of the few recent Canadian documents to examine regulatory activity was the special Committee on Statutory Instruments which reported in October of 1969. It was charged

with making recommendations for the better scrutiny of statutory instruments by the House of Commons. Of necessity it was required to attempt a definition of the regulatory function. After reviewing a wide range of legal literature and authorities and after wading through the diverse names often attached to such activity the Committee suggested the following definition:

> A regulation is a rule of conduct, enacted by a regulation making authority pursuant to an Act of Parliament, which has the force of law for an undetermined number of persons; it does not matter if this rule of conduct is called an order, a decree, an ordinance, a rule, or a regulation.[20]

The Committee went on to make several recommendations regarding the Parliamentary role in the scrutiny of regulation. These are of less importance in this section although we will have occasion to refer to some of these later.

In the foregoing definition there is a remarkable similarity of view between Lowi and the Committee in capturing the essential effect or function of regulatory activity. It is a "rule of conduct" which has the "force of law" as applied to an "undetermined number of persons". These are terms quite similar to Lowi's characterization of regulation as being a more direct form of legitimate coercion that expresses its political meaning to relatively large groups of people. Lowi would differ probably only in the sense that regulatory activity need not be expressed only as <u>delegated</u> legislation. The parent statute itself would be a regulatory rule-making output of government.

Some of the economic literature when stripped of its detailed analysis of particular regulatory problems in public utility fields such as transportation, telephone, atomic energy, etc., ultimately turns on the force and power of the state and its authorities to change or alter the otherwise unfettered "unregulated" behaviour of companies and industries. As the recent Brookings volume put it at its elementary best,

> "Regulation imposes constraints on the freedom of action of the management of regulated firms".[21]

Typically regulation seems to arise out of a public desire to avoid or prevent abuses. This is often reflected in the direct use, or threat of the use, of negative sanctions such as fines, penalties or revocation of licences. Almost by definition, therefore, regulatory authorities, find it easier to prevent the glaring negative abuses that gave rise to the need for regulation but find it extremely difficult to play the more active regulatory role whose objective may be to <u>positively maximize</u> and encourage different behaviour over and above the minimum rules of conduct prescribed by regulation. Perhaps the best illustration of this in the current Canadian context is in the field of anti-combines and/or competition policy. As the current debate illustrates, it is one thing to have a regulatory authority prevent abuses of commercial activity; it is another thing to accord the same authority the positive power to encourage industrial reorganizations and mergers on the grounds of some broad and vague set of economic criteria.[22]

It should not be surprising, therefore, that the economic

literature has been forced to explore regulatory behaviour primarily in terms of the issues surrounding the fair "rate of return" which regulated firms will be permitted to earn. This is the closest index of behaviour that can have some positive connotation and that is somehow quantifiable in broad general terms. Even the "rate of return" index, however, is viewed as a slow and conservative index.[23] This is not to suggest that no other economic analysis is of benefit to regulatory authorities. What does arise from literature such as the Brookings symposium is that even economic literature analysis must ultimately relate its basic understandings of the impact of regulatory activity on essentially political criteria. For example, problems such as the scope of the regulatory mandate are cited an unexplained variables.[24] Regulatory mandates that are broad and fuzzy are less likely to be successful precisely because they are not meaningful rules of behaviour. Hence one recent observer was moved to remark that the most successful regulatory bodies are those that have relatively precise, narrowly defined mandates.[25]

Hence, in some of the recent literature there seems to be some common ground, at least in the extent to which there is a recognition that regulation represents a function that has different coercive implications on individuals and groups than do other expenditure activities of government. As with our previous discussion of the concept of technology assessment, it is increasingly important to attempt to develop some broad understanding of the <u>regulatory function</u> before becoming

mesmerized by the myriad of regulatory units. It makes a great deal of difference whether the regulatory function is viewed in very broad positive terms (where it seems to be virtually equated with policy development and policy guidelines) or in narrower negative terms. As will be seen later much of the logic of recent developments in public policy analysis and organization seems to counsel the broader concept of the regulatory function. If this is so then it logically follows that it will seriously effect the twin questions of technology assessment and of the "Make or Buy" contracting out policy. The problem, however, cannot be tackled just by an elaboration of what the regulatory function might be. We shall look next at the evolution and implications of different types of regulatory unit.

B) Regulatory Units or Authorities

In Canada, there are basically three types of regulatory authority, the Governor in Council or Cabinet, individual Ministers, and independent Boards or Commissions. In several instances the regulatory authority is shared among two or all of the above authorities. The MacGuigan Committee confirmed that in Canada the Cabinet is the principal regulation-making authority:

> Out of 601 Acts surveyed for this Committee, 420 provide for delegated legislation. In 225 of these Acts or statutory provisions the Government in Council is the authority vested with the power to make regulations. In 93 Acts, several authorities are vested with the power to make regulations, but in 74 of these Acts, the Governor in Council is among the authorities given the power. In 36 of the Acts providing for delegated legislation, the power is given to a Board or a Commission.

but 17 of these have to be exercised with the approval of the Governor in Council.[26]

In 49 other Acts the authority resided principally with individual Ministers. The Committee noted, however, that much less use was made in Canada than in England, of ministerial regulations. It also acknowledged the lack of time for the full Cabinet to adequately assess the total volume of regulatory activity with which it was called upon to deal. Accordingly it recommended greater use of individual Ministers as regulatory authorities.[27]

Even the above figures, however, do not really reveal the total pattern of regulatory units. The Committee, for example, cited the existence of enumerable so-called departmental "directives and guidelines" which seemed to have the same effect as regulations but were not called regulations and hence did not come within the terms of the Regulations Act. This reflected the difficulty in drawing the line between what is a legislative act and what is an administrative or executive act.[28]

The key issue which emerges out of this brief survey is the extent to which the regulation-making activity is carried out by responsible <u>elected</u> politicians. The aggregate raw figures seem to formally lodge the majority of regulations in the Cabinet's domain. But is this a meaningful control, particularly when the authority is also vested in independent boards and commissions? The creation of many independent regulatory authorities, including the National Energy Board, the

Canadian Transportation Commission (and its predecessor bodies) and the Canadian Radio and Television Commission (and its predecessor bodies) was usually prompted by a desire to main an "independence from politics". But politics was viewed here in its perjorative terms where the entent in creating the board was to avoid both the fact and the appearance of partisan or pork-barreling political behaviour. When politics is viewed in its broader sense, (as in the Lowi typology for example) and when it is viewed within the context of a Cabinet-Parliamentary system of responsible government one can seriously question what the so-called independent board is supposed to be independent from.

The Special Committee expressed this concern:

> While independence is the hall-mark of the judicial branch of government, it should be quite alien to the executive branch. The government of the day must be fully responsible to Parliament, and through it to the people, for all subordinate laws which are made, whether or not the policy embodied therein was initiated within the existing departmental structure or elsewhere.[29]

Similarly, the Minister of Justice expressed concern.

> There is a basis for delegated legislative power which is related to political feeling, for example, where Parliament makes the effort to defuse some area of administration of the appearance of political considerations. I think this is a contentious matter. It is done by the establishment of a board or tribunal, and this board or tribunal is given a mixture of administrative, quasi-judicial and legislative powers. The exercise of these powers, under the general policy laid down by Parliament is administered by a non-political tribunal or body thereafter. Examples of this approach can be found in the National Energy Board, National Transportation Commission, and recent broadcasting legislation.

> The feeling is that where administrative decisions have a high political content, Parliament ought to ensure that politics is taken out of those decisions. I am not so sure that this really achieves the results that we are trying to achieve, because any time there is a choice open to an administrator, that is by its essence a political choice. Where an independent board or tribunal is not responsible through a Minister of the Crown to the House of Commons, then I believe Parliament has forfeited and the people through Parliament have forfeited, some of its rights to supervise those boards and to supervise the administration of government . . . I think it is fundamental that a minister take the heat for every administrative act of the federal jurisdiction".[30]

Independent regulatory units seem to have been created to "depolitize" their role or to take the politics out of regulation. The logic of technology assessment, not to mention Canadian constitutional government, strongly suggests that there ought to be a "repolitizing"of their role in the sense of increasing their exposure to the influence of elected responsible politicians. The wider and fuzzier the regulatory mandate the more politics is likely to enter the equation. It is interesting and instructive that in the recent Canadian debate on both the Competition Bill and the Foreign Takeover legislation, opponents of the legislation have focussed their criticism on the wide-ranging, highly unpredictable, powers of the independent boards which were proposed to implement the legislation. In one of these policy areas the Government decided to make the Minister, rather than a Board, the regulatory authority.[31]

The decision above was to tie the regulation to an elected political actor. In the areas of broadcasting, energy, and transportation, major parts of the regulatory activity were given to independent authorities. In at least two of these fields, the regulation, when previously held in Cabinet hands,

had resulted in political scandals or at least intense political controversy as to the propriety of political behavior.[32] There is nothing to suggest that if a Ministerial regulatory authority in an area such as the foreign takeover field were to actually engage in improper behavior, that the call would not arise for the regulatory unit to be made more "independent". In other words the depoliticization and repolitization forces can operate and <u>have</u> operated both ways.

This possibility is made more likely by the fact that all regulatory authorities, but especially independent boards, are multi-functional. They are given not just regulatory functions but also adjudicative or quasi-judicial and administrative functions. So-called quasi-judicial functions usually arise out of the commissions responsibilities to adjudicate disputes or to determine other matters such as the issuing and/or revocation of licenses according to quasi-judicial, court-like procedures.

In the literature on administrative law there is an endless debate on whether there ought to be, and on how one empirically distinguishes, judicial or quasi-judicial functions from administrative functions. Some submit that there is no workable line between these functions.[33] Others, having in mind the political controversy out of which many regulatory mandates emerge, will cite the importance of court-like procedures because it gives not only the <u>fact</u> but also the appearance of fairer decision-making processes. In Canada this value has been supported in ad hoc indirect ways until recently.[34] The Americans

have enshrined the value of procedural fairness more explicitly through the Administrative Procedures Act, a modified version of which has been proposed at both the Ontario and Federal Government levels.[35]

Hence the question of independence will always encounter the dilemma of balancing the twin dimensions of all democratic government activity, namely the desire for better integrated policy development under the direction of elected politicians and the equally strong concurrent desire for fair processes and procedures both for determining policy and for making decisions in individual cases.[36]

The dilemma of how to achieve this balance or at least how to encourage a balance between these twin objectives was reflected in the recent American Ash Council report, A New Regulatory Framework.[37] The appearance of this report also provides an opportunity to make some broad points most of which caution against extrapolating American regulatory structure and processes to the Canadian political scene.

The Ash Council's recommendations were based on several findings:

1. Regulatory commissions are not sufficiently accountable for their actions to either the Congress or the President because of their independence and remoteness in practice.
2. Deficiencies in the performance of the regulatory commissions are partly due to the difficulty of attracting highly qualified commissioners and retaining staff. In

particular it noted that even able administrators have difficulty in serving as coequals on collegial commissions.

3. Certain judicial activities of the commissions conflict with their policy making responsibilities and generate an organizational environment inimical to regulatory efficiency and constructive response to industry and the public.
4. Certain functional responsibilities are inappropriately distributed among the various commissions.[38]

Hence the Council recommended that the independent regulatory commissions in the transportation, power, securities, and consumer protection fields be transformed into executive agencies headed by single administrators responsible to the President. It also recommended changes in the agencies internal decision-making processes, especially to reduce the over-judicialized "case by case" approach. Finally, it proposed judicial review by a new specialized court rather than the regular courts of appeal.

The Ash Council report has, of course, been criticized because of what many feel are unquestioning faith in single headed hierarchical structures and its willingness to sacrifice existing procedural safeguards at the altar of policial accountability and policy efficiency.[39] Others felt that structural change of this kind made little difference one way or the other and that what was important was the scope of the mandate given.[40]

The above structural dilemma's have had their counterparts- albeit in slightly different ways in Canada as well. The composition of regulatory commissions has been criticized both as to the quality of some appointments and to the degree of representativeness of the members of the commissions. Recently this has lead to demands for provincial government appointed representatives on federal commissions such as the National Energy Board. The issue of the adequacy of procedural justice was raised by the McRuer Commission in Ontario.[41] As noted earlier the question of independence from the Cabinet and from Parliament has been a central issue in recent years. On the question of independence, however, it should be stressed that the Cabinet system of government, almost by definition, accords a higher degree of executive Cabinet authority over appointments and over regulation-making activity than exists in the American Congressional system, where the regulatory commissions are invariably cited as the "headless fourth branch" of governments. This is not to suggest that the Canadian Cabinet always exercises that authority or exercises it well but it does have a stronger legal or constitutional base from which to do so.

The question of federal-provincial relations in the regulatory arena is another point where American-Canadian comparisons must be severely qualified. This arises not just because of the different distribution of legislative powers in the two constitutions but because of the presence of a cabinet system at the provincial level and of the considerable concentration of power in a few strong provincial governments. As we

will see in our closer look at the three policy fields, the provincial presence, either via litigation or via their own intra-provincial regulatory units is extremely important.

Apart from the previously cited issues of political independence, procedural justice, representativeness and expertise, the question of regulatory reform ultimately involves a question of the amount of time a society is prepared to devote to regulatory consultation and participation. Many boards, agencies, (and departments too) were created because they would provide the expertise that could make the decision necessary and, moreover, could make them in a speedy and reliable enough fashion that other private decision makers (in the regulated constituency) could rely upon these decisions so that the private sector could make its decisions.

The most common hypothesis of regulatory relations is that the boards become the captives of the industries they are designed to regulate.[42] This is undoubtedly true in some areas but perhaps not as valid in others. In the Canadian context we still lack the empirical base to tell whether this is a viable proposition in all regulatory arenas. What may be more important, however, is not whether it is in fact true but that it is believed to be true. Both the substance and the appearance have to be taken into account in assessing the nature of reform in public political organizations.

Attitudes toward the amount of time that can be invested in hearings and in consultation with groups and other effected parties are important and they will turn on both political and

technical professional views. For example, the MacGuigan Committee asked all departments and agencies to comment on a proposal that regulations not take effect until they had been laid before Parliament thus allowing advance consultation with other groups. All departments opposed this concept in a formal sense. They felt they did this well already on an informal basis and any further requirements would result in unnecessary delays. The McRuer Civil Rights Commission in Ontario took a similar position. The MacGuigan Committee itself, however, suggested that more time ought to be taken for such consultation. It recommended that:

> "before making regulations, regulation-making authorities should engage in the widest feasible consultation, not only with the most directly affected persons, but also with the public at large where this would be relevant. Where a large body of new regulations is contemplated, the Government should consider submitting a White Paper".[43]

It is clear that recent discussions of the regulatory function and recent proposals for the reform of regulatory units structures and processes effect a significant part of political and governmental organization. Before exploring further what technology assessment and the "Make or Buy" policy might mean in the context of regulatory organization and reform, we will examine, in Part III, the developments in the three policy fields selected for this report, energy, transportation, and communications.

III ENERGY, TRANSPORTATION AND COMMUNICATIONS: RECENT CHANGES IN POLICY STRUCTURE AND APPROACH

The Energy, Transportation and Communications fields of public policy are extremely complex and it would be pretentious, to say the least, for this report to examine the substance of the regulatory activity in these policy fields in any detailed way. This was true when the study began. It was even more true when the interview phase of the study was cancelled by the Ministry of State for Science and Technology. The information has been drawn entirely from existing public documents and reports. In this connection, it should be noted that there is generally more readily available information on the policy processes of the three independent regulatory boards or commissions than on their corresponding regular government departments.

Hence, the six regulatory units, three of them independent units, and three of them regular departments were selected to serve only as examples. A general examination of the recent changes and approach in regulatory activity in particular and public policy processes in general in these three fields might help illustrate both the prospects and the problems of regulatory organization and reform. The patterns and issues that may emerge from this section must therefore be only illustrative and not conclusive.

A few points ought to be noted regarding the selection of the six units, the NEB, CTC, CRTC, NOT, DOC and EMR. First, each of the three independent boards were created at different points in time, and hence any analysis must recognize the importance of the relative political newness or freshness of the regulatory mandate. The NEB is the oldest unit and arose out of political controversy in the late 1950's.[44] The CTC arose out of a renewed debate about transportation policy in 1967 but its formation really represented a consolidation of previous regulatory units.[45] The CRTC is the newest and its mandate has perhaps received the strongest degree of general political support from the Cabinet.

The three regular departments have each been fairly recent creations or they have undergone major reorganization. Much of that reorganization can be said to have been prompted by a concern by government to be better able to develop more integrated systematic policy in these fields. Hence they illustrate at the outset, a concern for the same kinds of issues that attend much of the current discussion about so-called technology assessments and about policy co-ordination in its widest sense.

The EMR, MOT and DOC were selected, moreover, because they seemed to represent the departments whose own spending and regulatory activity were most closely related to the NEB, CTC and CRTC respectively. In particular, it would be important to be aware of the regulatory activity carried out by the department in comparison with that of the independent board or commission. In all three policy fields the regulatory authority is shared

concurrently between the independent board and the Cabinet, but the latter also obtains considerable advice from the department through its Minister.

None of the above, of course, should imply that important and close relationships will not develop with other departments. Indeed the logic of both technology assessment processes and systematic policy analysis suggests that such relationships must expand and must be integrated with the central structures of political policy organization. The NEB, for example has important regulatory relationships with the Department of Indian Affairs and Northern Development and the Department of the Environment regarding pipeline technology and its social and environmental consequences. The CRTC has important relationships with the Secretary of State because of its cultural and linguistic policy implications. Similarly, the Ministry of Transport has an enormous impact on questions of urban policy.

Each of the six units selected, has sought in various ways, to respond to the questions implicit in this report. The plan for the remaining sections of this part of the report is first, to present a brief account of some of the structures and issues in each of these fields, and then to compare, <u>on the basis of published documents only</u>, the regulatory <u>processes</u> that seem most germane to, or illustrative of, the technology assessment and "contracting out" issues.

ENERGY POLICY

Regulatory activity in the energy policy (or more specifically oil and gas) field is basically derived from the National Energy Board Act. Other important regulatory authority falls under the provisions of the Territorial Lands Act and the Public Lands Act, and hence involves, especially in recent years, an increasing role for the Department of Indian Affairs and Northern Development.[46]

The NEB regulates the interprovincial and international movement of oil and gas through the granting of certificates of public convenience for the construction of pipe lines and through the granting of licences for the import and export of oil and gas (and electrical power). It has the power, with the approval of the Cabinet, to regulate pipeline construction for "the protection of property and safety of the public". It also has the authority to issue "orders" regarding just and reasonable tolls and tariffs. In addition, the Board has a general advisory role to the Minister of Energy, Mines and Resources.[47]

With respect to the exportation of gas and oil the NEB is required to satisfy itself of the availability of sufficient current and future reserves and of a fair and reasonable price before issuing a licence to export. Crucial to the export elements of regulatory activity is the source and adequacy of the information regarding what reserves are in fact available and are in fact adequate. Hence in the context of R & D policy, the sources of research and policy data bulk extremely large, especially if there is a considerable reliance for information

by the governmental regulator on the regulated industry. The extent of this inadequacy and dependence has been recognized at least in part by a recent reorganization within the Department of Energy, Mines and Resources.

An Energy Development Sector in EMR was created because previously no one group within government could provide the overview for policy recommendations.

In the words of one EMR official, "Existing federal agencies in the energy field had neither the mandate nor the staff for a comprehensive approach to policy".[48] The recent EMR reorganization illustrates the difficulty of separating R & D activity from policy analysis activity and the further difficulty of distinguishing which part of these activities is in support of regulatory functions as opposed to other functions of government.

With respect to the adjudication and issuance of certificates of public convenience, both the NEB and EMR, and Indian Affairs and Northern Development have had to explore the contemporary meaning of such vague legal statutory phrases as "public convenience and necessity" and the "public interest". In determining whether to issue a certificate the Board, for example, may have regard to the following:

(a) the availability of oil or gas to the pipeline, or power to the international power line, as the case may be;

(b) the existence of markets, actual or potential;

(c) the economic feasibility of the pipeline or international power line;

(d) The financial responsibility and financial structure of the applicant, the methods of financing the line and the extent to which Canadians will have an opportunity of

participating in the financing, engineering and construction of the line; and

(e) any public interest that in the Board's opinion may be affected by the granting or the refusing of the application.[49]

As indicated in a recent speech by its Chairman, R.D. Howland, the NEB feels that it has taken a very broad view of the "public interest".

> We have always taken the view that a pipeline is much more than just an engineering structure, and as such, has impact upon the economy and environment of Canada and upon the welfare of numerous Canadians, including but not limited to, those who live along its right of way.[50]

Some will of course dispute the extent to which truly adequate attention has been given. The Alberta Government, for one, is not convinced that the current structure and processes of the NEB is adequate in representing the full "public interest".[51] Recent "guidelines" regarding the construction of Northern Pipelines, as developed by both EMR and IAND also reflect concern about the adequacy of the range of variables previously considered. Henceforth, the NEB will:

> ensure that applicants for certificates of public convenience and necessity document their research and assess expected effects of the project upon the environment; certificates to be strictly conditioned in respect of ecology and environment, pollution, erosion, freedom of navigation, rights of northern residents, according to standards issued by the Governor in Council on the advice of the Department of Indian Affairs and Northern Development.[52]

The NEB appears to accept and endorse the need for this wider assessment but when it comes to backing up these principles with the needed regulatory practice and processes, it seems to qualify its support. It suggests that pre-hearing conferences

with federal agencies and applicants would be useful, particularly given the financial magnitude of some of the proposed Northern Pipelines. It does not mention, however, even the possibility of participation of other groups.[53] The exercise seems unduly confined to industry and to government officials only. As we will see when we compare this position with the CRTC, the NEB's official public posture seems much more constrained when discussing broad participatory modes of regulatory decision-making.

TRANSPORTATION POLICY

Recent developments in Transportation Policy are best summed up on one word, "inter-modal". Recent changes in both the Ministry of Transport (MOT) and the Canadian Transportation Commission (CTC) were motivated by an apparent desire to be better able to assess the costs and benefits of all modes of transport, road, rail, air and sea. The basic objective of the National Transportation Policy was to provide an "economic efficient and adequate transportation system making the best use of all available modes of transportation at the lowest cost". More specifically, the National Transportation Act declared that "regulation of all modes of transport will not be of such a nature as to restrict the ability of any mode of transport to compete freely with any other modes of transport".[54]

Under the provisions of the National Transportation Act of 1967 the CTC emerged as an amalgamation of the staffs and duties of three predecessor boards, the Board of Transport Commissioners

for Canada, the Air Transport Board and the Canadian Maritime Commission, along with other responsibilities with respect to motor vehicle transport, commodity pipeline and research. The CTC currently functions by sub-dividing itself into several modal committees.[55]

When first created in 1967 the research mandate of the CTC was quite unique at least to the extent that it was given a formal statutory scope of no small magnitude. The CTC began to build up its research staff but this development was curtailed by the major reorganization of the former Department of Transport into the Ministry of Transport in 1969. As a result of the reorganization several components of the research program were transferred to the newly created Canadian Transportation Development Agency. Because of this change the CTC was moved to mention in its 1971 Annual Report that "the arrangement establishes a closer relationship between research and regulation and a greater flexibility in the use of professional expertise by the modal committees".[56]

Compared to the NEB and CRTC, the CTC has by far the greatest range and complexity of regulatory roles to carry out. Its regulatory authority comes not only from the Transportation Act but also from such statutes as the Railway Act, the Aeronautics Act and the Transport Act. It must act as a Court of Record and it has been given such curious and strictly administrative functions as the "administration of subsidies voted by Parliament for any mode of transport".[57] Its regulatory roles include its power to make "orders" regarding traffic, tolls and

tariffs, to establish regulations regarding safety, and to "disallow" acquisitions. All of these functions are to be performed in the light of the CTC's determination of the "public interest" as defined in the wide policy statement of clause 3 of the National Transportation Act. The Cabinet retains a residual power to reconsider or vary any decision of the CTC. The possible impact of these complex regulatory and adjudicatory roles can be assessed in the light of the equally important changes in the Ministry of Transport itself.

The reorganization of the DOT into the MOT was a response to a number of prior warnings including the apparently strong policy and research role which the CTC received in the 1967 Act. Previous Glassco and other analyses of the DOT had stressed its heavy operational emphasis and its relative lack of an active policy co-ordination and development capability.[58] In 1969 a task force was created and it proposed a reorganization of the Minister's portfolio (not just his department) as a Ministry System, along the following lines:

1. Ministry - to ensure that national transportation policy influences and responds to the objectives and programs of the public and private sector.

2. Operational- to provide, for any mode of transportation, such way, terminal and vehicular services supportable by recoverable financing from the users or other beneficiaries, that cannot or should not be offered by the private or other public sectors.

3. Regulatory - to balance economic, technical and social consequences resulting from changes in capability or use of transportation service and ensure that socially and economically viable standards of way, vehicle terminal

and operator performance are established and adequately maintained.

4. Development- to encourage and promote continuous improvement, innovation, growth or phase-out of modal and inter-modal transportation.

The implementation of the above concept began in 1970 and included the creation of a new policy-making forum, the Transportation Council, and a policy co-ordination body called the Bureau of Co-ordination. The Transportation Council has been described as being analogous to the Cabinet in that it is the core policy-making unit in the Ministry.[59] The Ministry concept in general, and specific units such as the Transportation Council, are of importance to this study as a possible model in other areas. For example, in addition to senior members of the Ministry executive, the Council indludes representatives from such formally independent units as the National Harbours Board, the St. Lawrence Seaway Authority, the Northern Transportation Company and - the Canadian Transportation Commission, all of which are part of the "Ministry".

The exact nature of the relationship between the CTC and the Transportation Council could not be determined. Because of its independent status, however, the CTC is not obliged to attend Council meetings (although it has regularly sent a representative) nor is it formally bound by policy proposals which might emanate from the Transportation Council.[60] Ultimately, such co-ordinating mechanisms must be assessed in terms of how they in fact contribute (or fail) to improve transportation policy in real terms. On this score there are criticisms

of both the MOT and the CTC reorganizations as being merely old wine in new bottles.[61] But the MOT "Ministry" model remains important because, as will be seen, the meaning of technology assessment in political terms depends not only on the substance of change but also on its form or appearance. The MOT model seems to aspire in a sensible direction and that is important, of and for itself.[62]

Efforts to co-ordinate are important in the Transport field for the obvious reason that CTC and MOT both have regulatory authority of both a complementary and, in some cases, a conflicting or overlapping kind. For example, the MOT has responsibilities regarding "standards" for oil tankers and other ships carrying pollutants in Canadian waters. The Motor Vehicle Act requires regulations covering the design, construction and performance of passenger cars, trucks, buses, motorcycles, trailers and snowmobiles. It has, moreover, a major involvement in such questions as airport locations and the proposed STOL Aircraft system, both of which have major current and potential regulatory content and involve the assessment of both existing and new technologies.

An overview of the Transport policy field suggests that some considerable effort has been expended, on a formal level at least, to give a greater probability of ministerial and political involvement in both regulatory and technology assessment functions. With respect to the other avenues of assessment, namely the opportunities for, and the attitudes towards, participation by other groups the formal record, (to the extent that

can be gathered from published sources) is less complementary and less encouraging. In the case of the STOL aircraft assessment one commentator was moved to make the following statement.

> Rather than responding to public wishes (government) tends to sponsor activities and then devotes its huge resources to persuading us they are what we really want.
>
> Consider for example the STOL (Short Take-Off and Landing) program; what urbanite really wants short take-off and land aircraft operation from the heart of his city except the technocrat in government and his allies in the aircraft industry?[63]

The opportunity for such wishes or views to be expressed is normally not programmed in, in any meaningful way, despite official statements in praise of participatory policy and regulatory processes.

COMMUNICATIONS POLICY

As was the case with the two preceding policy fields any attempt to "summarize" developments in communications policy in a few pages is bound to be inadequate. In the communications policy field, however, we are considerably aided, in a study of this kind, by the recently published report and background studies of the Telecommission, a commission sponsored primarily by the Department of Communications and the CRTC. The telecommission itself represents a joint effort by the two governmental units most directly responsible for communications policy generally and broadcasting policy more specifically.

The breadth of impact of communications policy was presented in the following statement from the Telecommission report;

> Telecommunications systems designed primarily for the transmission of information in any form, making the contents of databanks and the processing power of computers commonly and readily available, may open the way to new dimensions of knowledge, not only to business and industry but equally in the home and at school. Moreover, the interactive two-way capabilities of such systems suggest the possibility of much wider participation by individuals in politics, community affairs, broadcasting and the arts. Eventually, for those who can afford it, the standard telephone may incorporate video-screen, keyboard, and print-out equipment, giving instant access to all available information and, by simulating face-to-face communication, reduce the need for personal movement and transportation.[64]

The report goes on to point out that much of the above is already technically feasible but that the rate of implementation is largely limited by existing telecommunications plants. Hence, technology assessment is importantly related to old technologies as well as new and "an objective of telecommunications policy may therefore be to ensure that access to services and innovation in response to public needs are not unreasonably retarded by the weight of investment in existing facilities".[65]

However, the issues of regulatory policy in the communications field are not just related to the "medium", but also to the "messages", to the content and social basis of what is communicated and what is not. In the Canadian context this has centred primarily on broadcasting policy and what Canadian objectives it ought to serve. The words of the Secretary of State, the Minister through whom the CRTC reported (until recently), expresses an overriding concern.

> Today more than ever social communications are inextricably linked to the growth of the tools and machines supposed to serve them. And there is great risk that the future of broadcasting systems be defined more by the efficient agents who develop the instruments to process and distribute quantitatively images and messages, rather than by those who create the images and messages without which we could not communicate or even understand one another.[66]

The CRTC's regulatory authority is found in the Broadcasting Act of 1968. The Act contains a fairly lengthy statement of the Broadcasting Policy for Canada, the objectives of the policy including such things as the "development of national unity", and the development of programming that is "varied and comprehensive and should provide reasonable balanced opportunity for the expression of differing views on matters of public concern", and that is "of high standard using predominantly Canadian creative and other resources".[67]

The powers of the CRTC are to regulate persons holding broadcasting licenses respecting such issues as the standards of programs, the character of advertising, the proportion of time regarding partisan political broadcasting and other matters regarding the operation of broadcasting undertakings. Licenses, however, cannot be issued by the Executive Committee of the CRTC "unless the Minister of Communications certifies to the Commission that the applicant has satisfied the requirements of the Radio Act and regulations".[68] The Cabinet, moreover, may set aside or change a CRTC decision to issue a license.

The Department of Communications was established in 1969 to better co-ordinate and develop the efficiency of communica-

tions systems and facilities. The DOC has major regulatory roles arising out of such statutes as the Radio Act, the Telegraphs Act, the Canadian Overseas Telecommunications Act and the Telstat Canada Act. The Minister of Communications is also the spokesman in Parliament for the Canadian Transport Commission on communications matters.[69]

Both the CRTC and the DOC have undertaken considerable R & D activity. The CRTC, for example, has studied the social, economic and legal factors involved in licensing broadcasting undertakings and the institutional and technological factors that determine the quality and quantity of programming. The Communications Research Centre of the DOC has undertaken research into various aspects of communications systems, including cable television, space systems and such support areas as computer-aided electronic circuitry design. Of course the Telecommission study itself was a very extensive joint effort by the CRTC and DOC to assess communications policy implications. The emphasis of the study however, was more on the "medium" than on the message, since broadcasting policy as such was excluded from the Commission's terms of reference.

The Telecommission studies also reveal some interesting and not totally unexpected, insights into the attitudes towards more extensive forms of public participation. Much more than the other two boards, (the CTC and NEB) the CRTC has both endorsed and practiced the processes of permitting participation by a wide range of groups in regulatory policy-making. Perhaps the very nature of its policy field compels this although it is

difficult to understand why the other two fields are any less amenable to similar practices. The willingness to value political participation has been carried out by the CRTC despite the fact that it, too, is a Court of Record, a fact which, in the case of other boards, has often been held as a major reason why broader forms of participation are unsuitable. The court-like adjudicatory environment, it is often suggested, is not suitable for the free swinging participatory activity.

The Telecommission studies also illustrate the not unexpected position of the major industries being regulated. In their briefs to the Telecommission they stressed the need to have regulation confined mainly to rates, in the classic public utility pricing concept:

> Regulation and management should complement and not duplicate each other. Regulations should be directed at those factors required to ensure that the public receives the benefit of just and reasonable prices and is not subjected to unjust discrimination, while at the same time preserving the financial integrity of the utility. Responsibility for modernization, innovation, cost reduction, improved efficiency and methods of financing should remain with management. A profusion of controls would not encourage management to become efficient, to innovate, or to modernize.[70]

Industry spokesmen were concerned that corporate managerial perogatives be respected in areas of capital investment and other technology-related questions. They pointed out that the basic nature of quasi-judicial regulatory processes are already prone to delay. They acknowledge the need for interested parties to be heard but are clearly concerned about any further delays being built into an already delay prone regulatory process.[71]

The above quotation illustrates again the heart of the dilemma for those who seriously wish to advocate and achieve the reform of regulatory and policy processes so as to assess the harmful and beneficial effects of technology.

If it is to be something other than perfunctory window-dressing, and if it is to be undertaken by persons other than just technologists and officials in government and in the industries concerned, then technology assessment does mean both the increased intervention of the state and the slowing down of regulatory processes to give other groups the time to participate.

ILLUSTRATIVE PROBLEMS

At the beginning of this section it was stressed that the three policy fields would be described and examined very broadly as examples to see what problems and prospects they might illustrate for the questions of both technology assessment and contracting out R & D in the regulatory area. Several points seem to emerge although the unevenness (in each of the three fields) of the published documents used for this study must counsel some caution.

1. In all three fields the regulatory authority is formally shared by the independent unit and the Cabinet in that the Cabinet has as residual authority to overrule the Board if it wishes. The MOT Ministry concept seems to have gone farthest, again at a formal level, in attempting to secure a more continuous political presence of an elected Minister in the activities of his "ministry" rather than just his department. This need not

necessarily be the only way of securing such a relationship. There is some evidence, for example that the CRTC-DOC relationship is quite good in this respect.

2. All three fields bear witness to the fact that there is not always a clear-cut rationale why some regulatory activity is under the department itself while other seemingly similar activity requires independent boards and commissions. This might suggest that something like the MOT Ministry concept would be worthwhile as a general concept of government organization.

3. In all three fields the concept of regulation appears to be very wide both in the variety of statutory language used (with phrases such as rules, orders, guidelines and regulations used interchangeably) and in terms of the emerging range of variables that must be considered to intelligently assess the policy alternatives and their effects, be they regulatory or otherwise.

4. In all three fields the independent unit (but <u>not</u> the department) is given some powers and responsibility to conduct public hearings. However, there seems to be a wide divergence in attitude towards both the extent to which public participation is encouraged and towards the kinds of groups whose participation would be welcomed. The adjudicatory requirements of being a court of record may constrain participation but the CRTC experience illustrates that this need not be the case.

5. It is unlikely that the main regulated firms subject to regulations would be favorably disposed to the introduction of further devices of participation which cause further delays in

the regulatory process. Furthermore, they are likely to view most issues of technological change as a managerial perogative.

6. The development of quite large policy planning and research sections in the departments seems to attest to the fact that R & D activity is increasingly indistinguishable from policy planning and analysis activity.

IV. THE "MAKE OR BUY" SCIENCE POLICY AND REGULATORY ACTIVITY

When this report was first commissioned in May, 1972, MOSST had not yet announced what has come to be known as the "Make or Buy Contracting Out Policy". As mentioned in the introduction to this report one of the items in our terms of reference was to comment upon the appropriateness of contracting out research and development when it is in support of a regulatory function of government. Should such research be contracted out to the regulated industry? The "Make or Buy" policy clearly indicates that "where the R & D is essential to provide direct support to a regulatory function" is one of the criteria for having research done in government facilities rather than contracted out.

The purpose of this section will be to assess, and to offer a constructive critique of, the "Make or Buy" policy in the light of the discussion of the preceding sections of the report.

The rationale and basis for the MOSST policy statement is by now familiar. It reflects the main issues of the Canadian Science Policy debate of the 1960's going as far back as the Glassco Report. These issues and the "Make or Buy" policy statement are best summarized in the Minister's own statement:

> The traditional policy of having government facilities perform by far the largest share of R & D work for government has served its purpose but cannot meet Canada's future needs. In the light of this country's experience in recent years and the experience of other nations it

> has become clear that, when little of a nation's research and development takes place in industry, the results are less likely to be transferred into the market place.[72]

More specifically, the following factors were cited as having influenced the government's decision.

1) That industry in Canada invested a much smaller share of the gross national product in research and development than most industrialized nations, less than half the proportion invested in Britain, in the United States and Japan.

2) That the federal government has contributed less proportionately to R & D performed in the business sector than some other industrialized countries. For instance, Britain, France and Germany have underwritten a larger portion of the R & D performed in industry than has Canada. On the other hand, the Japanese government has contributed less.

3) Canada, as well, ranks far below countries such as Sweden, the U.S., Germany, Belgium, Britain, Japan, Netherlands and France in the percentage of R & D carried out by business on its own behalf.

4) Canada spends relatively much less on the development end of the research and development spectrum than is done in other countries.

5) Only 200 Canadian industrial firms have R & D establishments of more than five scientists or engineers. About 500 or 70 per cent employ five or fewer graduates.

6) That because of Canadian industry's reliance on foreign technology and the influence of the multi-national corporation in Canada, Canadian subsidiaries often have been slow to recognize the benefits of product specialization.

7) The new challenges to the nation's competitive position from such developments as Britain's entry into the Common Market and the American DISC program.

8) The fact that Canada has a labor force growing at a vastly greater rate than most other industrialized countries. Thus it is necessary to keep up the momentum of newly created jobs which, over the past three years, totalled 700,000, in relative terms more than in any other industrialized nation.

9) The fact that as a nation we are graduating an ever-increasing number of highly educated Canadians for whom suitable employment opportunities must be created.

10) The fact that Canada is far more dependent on exports than most industrial nations.[73]

The objective of the "Make or Buy" policy would be to insure that "a progressively larger portion of government funded research and development is done by industry", and R & D results are "translated more effectively into additional Canadian industrial capability". The government's own R & D facilities would be kept strong and "there will be no firings or layoffs of government employees engaged in R & D work".[74]

The policy announcement specifically noted several agencies "whose contracting-out ratios could increase markedly".[75] (See Chart I). These included the National Research Council, and the Departments of National Defence, Agriculture, Environment, Communications and Energy, Mines and Resources, the latter being of particular interest to this study.

TOTAL COSTS OF RESEARCH & DEVELOPMENT

(not including related scientific activity)

BY DEPARTMENT OR AGENCY

BY PERFORMER

1971-72

(APPROXIMATE MILLIONS $)

CHART #1

Department or Agency	Intramural	Industry	Universities	Other	Total
National Research Council	50	9	56	3	118
A.E.C.B. & A.E.C.L.	59	22	9	0	90
Environment	83	1	2	2	88
Industry, Trade & Commerce	2	83	1	0	86
Agriculture	68	0	1	0	69
National Defence	41	17	3	1	62
Medical Research Council	0	0	30	4	34
Energy, Mines & Resources	27	3	1	0	31
National Health & Welfare	6	0	13	7	26
Communications	12	4	0	0	16
Other	10	1	2	2	15
TOTAL	358	140	118	19	635

Source: Statistics Canada.

As a result of the policy "the onus is now on the government departments to place their research and development contracts with private industry rather than do it themselves".[76] The policy statement declared further that,

> Criteria for having research done in government facilities are based on the exceptional situations in which the best interests of the country would appear to be served if the R & D were done "in-house". In all other instances new mission-oriented R & D will be contracted out.[77]

The criteria are:

1) Where questions of national security prohibit industrial involvement; this is expected to apply to only a very small fraction of classified projects.

2) Where no suitable industrial capability exists and it would not be of optimum benefit to Canada to create it.

3) Where the R & D is essential to provide direct support to a regulatory function, such as that associated with protection of the public from unsafe drugs, of the certification of food additives and where a potential conflict of interest might arise in a commercial establishment.

4) Where the R & D is essential to the development and maintenance of national primary standards involving weights, length and time, etc., and, in some cases, secondary and consumer standards, including their relationship to international standards.

5) Where the conduct of R & D is essential to departments in order to establish and maintain a limited in-house competence sufficient to assess opportunities represented by the current state of the art, to enable the operating department to perform its mission and manage contract research in industry.

6) Where it would be wasteful to duplicate capital facilities owned by government and servicing industry.

The writer of this report was not privy to the discussions and deliberations that resulted in the drafting of the policy statements. Hence a critique of the statement is based only an assessment of its logic as stated. If any validity is accorded the discussion contained in the early parts of this report then it is this writer's contention that there are several serious flaws in the "Make or Buy" policy statement insofar as it affects the topic of this paper - namely regulatory activity, and the development of meaningful criteria for contracting out.

First, it is patently misleading to refer to the 6 criteria which might justify in-house research as being "exceptional situations". It is misleading whether one is talking about the six criteria taken together, or about criteria 3 which referred specifically to regulatory functions. It is misleading because this kind of activity represents an enormous part of government activity and hence is hardly exceptional. It is exceptional only if one views it primarily from a strict "science policy" perspective such as has characterized the 1960's and early 1970's, where virtually all of the attention was on the expenditure side of government activity. But clearly, regulatory activity has always represented at least the "other half" of the reality of government. Moreover, given some of the apparent demands for better social management of technological societies, regulatory responses and activity seem likely to increase significantly in the coming decade.

A second major point concerns the concept and definition of the regulatory functions. Again it is not known to what extent the Ministry of State for Science and Technology has explored the meaning of this function. The study done in the preparation of this report indicates that no government department has a clear view of what regulation includes. As the MacGuigan Committee observed, regulations need not be called that to have the effect of regulations. Rules, orders, guidelines, standards and similar words are used to characterize the same activity. Even in the MOSST statement, both "regulation" (criteria 3) and "standards" (criteria 4) are utilized. Hence the regulatory functions of government departments and agencies seem, if anything, to be casting a wider and wider definitional net. This definition is increasingly and logically being extended to the point where it is virtually equated with public policy formulation.

This development is logical because it reflects a function of public bureaucracies which are only dimly acknowledged in the MOSST "Make or Buy"policy criteria. That function concerns the political legitimacy and credibility of the policy advice (and the R & D which supported it) which is tendered by public governmental departments and their officials, as opposed to that tendered by private industry or other non-governmental sources.

This point is partly acknowledged in the MOSST statement. Criteria 1, for example, refers to the obvious issue of

national security. Criteria 5 recognizes the need of departments to have "limited in-house competence" sufficient to manage contracts and carry out their mission. In addition criteria 3 dealing with regulation, cites examples dealing with drugs and food additives and "where a potential conflict of interest might arise in a commercial establishment".

This partial acknowledgement of "public interest" questions is, however, far too limited a conception, particularly when it is combined with the assertion that these criteria will be viewed henceforth as being only "exceptional situations". The fact is that these questions which relate to the way in which policy information and R & D is gathered and the legitimacy of the sources are always critical. Demands for better mechanisms of technology assessment will make such questions even more important.[78] The debates on administrative justice are filled with assertions that justice must not only be done, but must appear to be done. Similarly, public policy, including regulatory policy processes, will increasingly have to be not only fair but appear to be so. Hence it matters a great deal who does the R & D which supports and is the basis of much policy making activity.

The above points of criticism of the MOSST policy - that it misleads by calling the criteria "exceptional", that it fails to seriously consider what "regulation" really might mean in contemporary government, and that it treats far too lightly the conflict of interest or legitimacy of policy advice question - can lead to a number of possible consequences.

The logic of all three could suggest that more and not less R & D work should be done in-house. Or it could suggest that even if more R & D is in fact contracted out to industry then still greater in-house R & D will be necessary to monitor the contracted-out research. Such monitoring will require not just some minimum R & D competence to interpret the contracted-out R & D or policy analysis, but rather some maximum ability to evaluate the incoming R & D in a complete sense. The MOSST policy statement, for example, specifically singled out departments such as EMR, DOC and the Environment where more contracted-out research should be done. Based on the sources used for this report, this need is not self-evidently obvious. In both EMR and DOC one could strenuously and legitimately argue that the department's inhouse R & D in support of policy is still infinitesimal, when compared with the industries and sectors it regulates and that both departments and boards are still excessively dependent upon the industries they regulate for much of their very basic regulatory information.

To suggest that perhaps more and not less in-house R & D is needed to meet modern regulatory realities seems, of course, to run directly counter to the consensus which underlies the MOSST "Make or Buy" policy. For ten years science policy makers have sought to build a consensus around the view that more of our R & D had to be done in industry. Canada's spending patterns were peculiar and we had to reverse the trend. Much of that policy consensus is probably still valid. But to implement a policy based only on that consensus may well prove

to be very wrong indeed.

Contracting out to industry is very much a second generation response to what the Lamontagne Report referred to as second generation science policy questions. When viewed from the perspective of regulatory activity and from the perspective of developing better processes of technology assessment in a democratic political setting, the policy of contracting out is less obviously valid. Several departments will have a very legitimate basis for claiming the need for greater in-house R & D because of the increasing importance of the variables which the MOSST policy treats as "exceptional situations" but which, in fact, are very normal unexceptional situations.

V. FUTURE STRUCTURES AND CRITERIA

Having analyzed the concepts of technology assessment and the concept of regulation and having illustrated these concepts in relation to the three selected policy fields and to the "Make or Buy" policy, we are now in a position to "report on ways of assisting the development of 1) better structures and approaches" for assessing technology, and the development of 2) "better criteria for determining the appropriate amount of in-house research needed to support the regulatory and related technology assessment functions".

Many of the suggestions made in this concluding summary undoubtedly go beyond the formal jurisdiction of the Ministry of State for Science and Technology, while others will be within its competence. Despite this, it seems to be self-evident that a Ministry created to deal with policies regarding science and technology should undertake the responsibility to have some of these issues discussed and considered by the relevant authorities within government.

The phrase "technology assessment" undoubtedly has many of the pitfalls and ambiguities of other recent catch-all concepts. This should not, however, prevent us from recognizing that its proponents are articulating a very serious and fundamental issue, namely, the abilities of a society to understand and manage its technology in the context of a democratic political system. This report is based on the premise that better mechanisms of technology assessment are in fact needed.

Suggestions as to how to develop better ways of assessing technology must ultimately be made in relation to current political and governmental organization. Hence, the suggestions which follow are based entirely on different kinds of organizational reform which have either been tried in the Canadian context or which seem worthy of more study and analysis. Our brief scanning of the three selected policy fields gives some grounds for optimism in that there is evidence of concern for reforming structures and practices.

The one reality, however, which few seem to be prepared to acknowledge openly is the time that will have to be taken in our decision-making processes if technology assessment is to have real meaning. Everyone acknowledges the need for more systematic analysis and thinks that participation would be a good thing, as long as it does not slow down or delay public policy making processes. It is a basic premise of this paper that technology assessment must mean the slowing down of public policy processes. Technology assessment implies the social regulation of technology by the state through the intervention of its political processes. It involves the investment of real time to consider variables, and to assert values, which would not otherwise be considered.

It is because technology assessment involves more intensive and extensive forms of social regulation that the meaning of the concept of regulation becomes very broad and loses whatever simple clarity it might have had when it was viewed in more narrow simplistic terms.

A further premise which is of major importance in this broad concept of social regulation is the role of elected politicians. It is true of course that politicians are very much dependent upon the advice of professional experts but there are still important ways in which the role of the politician can and should be make more meaningful.

Both of the above premises, the extent to which the time demands are seriously acknowledged and the extent to which elected political officials are involved, are themselves important criteria for developing better approaches to technology assessment. Our reading of the literature suggests four other areas of possible improvement and reform, the Ministry concept, the Office of Technology Assessment, the Office of Consumer Advocate, and Public Hearings by Regulatory Authorities. Accordingly it is suggested that:

1. Consideration should be given to the feasibility of adopting the MOT Ministry organizational concept in a number of other policy fields including the energy and communication policy fields. The shared and frequently overlapping regulatory roles of the department and the independent board, the need to relate regulatory roles with expenditure activity in a more systematic fashion, and the need to give the elected political Minister, both the appearance and the reality of greater control over his total portfolio, all are reasons which seem to suggest that the MOT Ministry model may be worth emulating elsewhere.
2. Consideration should be given to the feasibility of creating

a Canadian equivalent of the Office of Technology Assessment (OTA). With regard to the performance of OTA functions MOSST may wish to explore whether MOSST itself would be able to play this role. This might not be feasible unless MOSST is prepared to operate in a more public fashion rather than in its current more confidential intra-governmental fashion. On the other hand, it could well prove to be a natural function for MOSST to undertake. As an alternative, consideration might be given to attaching an OTA to Parliament, rather than to the Government, where it might assist several parliamentary committees in a more public fashion closer to the home base of the majority of our federal elected politicians, namely the Parliamentary arena. Another alternative, of course, might be to adopt a strategy against creating a single agency such as an OTA relying instead upon a variety of reforms to achieve the same goals. The chief advantage of creating some form of an OTA may be that, somewhat like the creation of MOSST, itself, it would symbolize and provide a focus for these questions.

3. Pressure for an Office of Consumer Advocate, is likely to increase and indeed <u>may</u> be formally recommended by the Canadian Consumer Council as a part of a study it is currently conducting on the consumer and regulatory bodies. Such an OCA could take many forms but its functions would effect many of the questions raised in this study. Because the role of an OCA would have important consequences not

only for the likely functions of an OTA (discussed in 2 above) but also for the day to day functioning of regulatory bodies, MOSST ought to further examine these relationships so that it could assist the Cabinet in the evaluation of this reform proposal from the point of view of its responsibilities for science and technology policy co-ordination.

4. If MOSST adopts the premises that underly this report it ought to urge and encourage, by all possible means, the greater utilization of open public hearings and conferences by regulatory authorities (be they independent boards or departments) so as to make available the time for greater participation by those individuals and groups who are concerned and effected by a particular regulatory issue. Such legal mandates for hearings exist already but the degree of variation in the spirit and in the practice of their application is enormous.

Each of the above suggested areas of reform and further study seem to have some prospect of improving the processes of technology assessment. It is to be reiterated that these suggestions flow entirely from existing literature and documents. Because interviews were not conducted, it has not been possible to assess the possible reactions to such reforms. This latter phase of the work still remains to be done.

As noted in Part IV, when this report was first commissioned the MOSST "Make or Buy" policy had not been announced. The announcement of the policy affects our task of developing

"better criteria" for determining the appropriate amount of in-house versus contracted out research. The"Make or Buy" policy establishes that R & D carried out in support of regulatory functions should be done "in-house". This report expresses agreement with that criteria. It is respectfully suggested, however, that the criteria as enunciated in the MOSST announcement should be reformulated to give greater recognition to the fact that the six criteria listed as "exceptional situations" are really quite normal situations particularly when the concept of <u>regulation</u> seems to have logically acquired a very broad meaning. The criteria do not accord a sufficient importance to the increasingly close connection between the "R & D" and "policy analysis" activities of government, and hence underestimate the importance of the legitimacy of the <u>origins</u> of the R & D so as to avoid conflict of interest questions. By treating this legitimacy issue as an "exceptional situation", the currently listed criteria do not accurately reflect an important and growing issue in government, an issue which arises anew in the "technology assessment" debate, but which is as old as democratic government itself.

FOOTNOTES

1. G.B. Doern, "Political Policy Making: A Commentary on the Economic Council. Eighth Annual Review and the Ritchie Report". Private Planning Association of Canada, 1972.

2. Office of the Minister of State for Science and Technology. News Release "New Contracting Out Policy" August, 1972.

3. See Technology Assessment Hearings Before the Sub-Committee on Science, Research, And Development of the Committee On Science And Astronautics. U.S. House of Representatives. Ninety-First Congress, First Session (Washington: U.S. Government Printing Office. 1970).

4. Raphael G. Kasper, ed. Technology Assessment Understanding The Social Consequences of Technological Applications. (New York, Praeger Publishers, 1972), p.3.

5. See SPPSG, Newsletter For The Science and Public Policy Studies Group. Vol. 3, No. 4. (March 1972) pp. 1-4 and Deborah Shapley, "Office of Technology Assessment: Congress Smiles, Scientists Wince". Science, Vol. 175 (3 March, 1972) pp. 970-973.

6. Quoted in SPPSG, Vol. 3, No. 4 (March 1972) p. 3.

7. See M.J. Trebilcock, "The Case for creating a Spokesman for consumers". The Globe and Mail, Saturday, November 18, 1972, p. 7; James D. Carroll, "Participatory Technology", Science, Vol. 171, February 19, 1971, pp. 647-653, and Richard C. Leone "Public Interest Advocacy and the Regulatory Process", The Annals, Vol. 400, March 1972, pp. 46-58.

8. See M.J. Trebilcock, op.cit. The Canadian Consumer Council is considering a similar proposal as a part of its current study of the consumer and regulatory bodies.

9. For discussions of the informational problems see Clarence H. Danhof, "Assessment Information Systems" in Raphael G. Kasper, ed. Technology Assessment, pp. 7-28; Instant World: A Report on Telecommunications in Canada, 1971, pp. 188-190 and 198-202; and Erich Jantsch, Technological Forcasting In Perspective. Organization For Economic Co-operation And Development. Paris, 1967.

10. This charge was made repeatedly in the Daddario Committee hearings in the United States.

11. See, for example, Royal Commission Inquiry into Civil Rights (McRuer Commission) Report, Toronto, Queens Printer, 1969, and James Q. Wilson, "The Dead Hand of Regulation". The Public Interest, No. 25, Fall 1971, pp. 39-58.

12. See, for example, William M. Capron, ed., Technological Change In Regulated Industries Brookings Institution Studies in the Regulation of Economic Activity. The Brookings Institution, Washington, 1971; and Richard E. Caves, Air Transport and Its Regulators, Harvard University Press, 1962.

13. See, for example, John E. Kersell, Parliamentary Supervision of Delegated Legislation (London Stevens, 1960) and Samuel Krislov and Lloyd D. Musolf eds. The Politics of Regulation. (Boston: Houghton Mifflen, 1964).

14. See Theodore J. Lowi, "Four Systems of Policy, Politics And Choice". Public Administration Review, July/August 1972, pp. 298-310, Report of The Special Committee on Statutory Instruments (hereafter cited as the MacGuigan Committee) House of Commons, Votes and Proceedings, October 22, 1969, pp. 1414-1462, and William M. Capron, ed. Technological Change in Regulated Industries (Washington, Brookings Institution, 1971).

15. T. Lowi, "Decision-Making vs. Policy Making: Toward an Antidote for Technocracy", Public Administration Review (May/June 1970), p. 315.

16. See Doern, op. cit.

17. T. Lowi, "Four Systems of Policy, Politics and Choice", op.cit., p. 299.

18. T. Lowi, "American Business, Public Policy, Case Studies and Political Theory", World Politics, Vol. xvi. No. 4 (July, 1964), p. 692.

19. T. Lowi, "Four Systems of Policy, Politics and Choice", op.cit., p. 299.

20. MacGuigan Report, op.cit., p. 1427. For related definitional problems see Robert F. Legget, Standards in Canada, (Ottawa, 1971).

21. William Capron, ed., op.cit., p. 3.

22. Ibid, p. 224.

23. Ibid., pp. 1-5.

24. Ibid., pp. 222-223. See also James D. Wilson, op.cit. pp. 44-46.

25. Roger C. Cramton, "Regulatory Structure and Regulatory Performance: A Critique of the Ash Council Report" Public Administration Review (July/August, 1972) p. 287.

26. MacGuigan Report, op.cit., pp. 1448-1449.

27. Ibid., pp. 1448-1450.

28. Ibid., p. 1435.

29. Ibid., pp. 1447-1448.

30. Quoted in Ibid., p. 1448.

31. See W.A. Macdonald, "Will the Competition Bill Really Be Changed", Financial Post, June 17, 1972, p. 13; W.A. Macdonald "Will Competition Act Shackle Business", The Globe and Mail, Thursday, December 2, 1971; Government of Canada, Foreign Direct Investment in Canada (Ottawa, 1972) Chapter 25, pp. 455-478, and William Neilson, "The Competition Act and the Public", The Canadian Forum (January/February 1972) pp. 2-3.

32. The"Pipeline" debate and earlier railway controversies are two main examples.

33. See Ivan R. Feltham "Transport Regulation in Canada" Conference Papers. Conference on National Transport Policy (May 22-25) 1972. Toronto: University of Toronto - York University Joint Program In Transportation, p. 22.

34. The recent creation of the Federal Court of Canada and the recommendations of the Ontario McRuer Commission have reflected recent concern. See also John Willis, "The McRuer Report: Lawyers' Values and Civil Servants' Values", University of Toronto Law Journal, Vol. 18, 1968, pp. 351-360.

35. For some of the implications of the American Administrative Procedures Act see Joseph Zwerdling "The Role and Functions of Federal Hearing Examiners", The Annals, Vol 400, (March 1972), pp. 27-35.

36. For an excellent assessment of this perpetual democratic balancing exercise see James Q. Wilson, "The Dead Hand of Regulation", op.cit.

37. A New Regulatory Framework. Report On Selected Independent Regulatory Agencies. The President's Advisory Council On Executive Organization (Washington. U.S. Government Printing Office) 1971.

38. Ibid., pp. 4-5.

39. Maiver H. Bernstein, "Independent Regulatory Agencies: A Perspective On Their Reform". The Annals, Vol. 400, (March 1972), pp. 14-26.

40. Roger C. Cramton, op.cit., pp. 284-290.

41. See Hyman Solomon, "Alberta has 'no faith' in NEB". Financial Post, October 7, 1972, p. 12.

42. Wilson, op.cit., pp. 46-49.

43. MacGuigan Report, op.cit., p. 1466.

44. See W. Kilbourn, Pipeline (Clarke Irwin, Toronto, 1970).

45. F.W. Anderson, "The Philosophy of the MacPherson Royal Commission And The National Transportation Act: A Retrospective Essay." Conference Papers. Conference on National Transport Policy, Toronto, 1972.

46. See Robert R. Foulkes. "The Regulatory Function of Government: The National Energy Board". Unpublished M.A. Thesis. School of Public Administration, Carleton University, 1972.

47. National Energy Board Act, 1959, section 22.

48. J. Lewington, "Ottawa Beefs Up Energy Expertise". The Financial Post, November 18, 1972, p. 31.

49. National Energy Board Act, section 44.

50. R.D. Howland, "Principal Requirements For Northern Pipelines". Reprint from Proceedings, Canadian Northern Pipeline Research Conference, February 2-4, 1972. Ottawa, National Research Council of Canada, p. 193.

51. H. Solomon, op.cit., p. 12.

52. R.D. Howland, op.cit., p. 194.

53. Ibid, p. 197. For a partial examination of corporate participation see John N. McDougall, "Foreign Controlled Corporations And Canadian Politics: The Petroleum Industry And Canadian Natural Gas Exports". Unpublished paper, Dalhousie University, Halifax, 1972.

54. National Transportation Act, section 3.

55. See A.W. Currie, Canadian Transportation Economics. (Toronto: University of Toronto Press, 1967); Howard J. Darling, "Transport Policy In Canada: The Struggle of Ideologies Versus Realities", Conference Papers. Conference on National Transport Policy, Toronto, 1972; and Fifth Annual Report of The Canadian Transport Commission, Ottawa, 1972.

56. Fifth Annual Report, op.cit., p. 24.

57. National Transportation Act, section 22(c).

58. See John W. Langford, "The Making of Transport Policies: A Case Study The Ministry of Transport As A Policy Making Institution". Conference Papers. Conference on National Transport Policy, Toronto, 1972.

59. Ibid., p. 37.

60. Ibid., p. 38.

61. See, for example, F.W. Anderson, op.cit., pp. 28-29.

62. For other discussions of the Ministry concept in Government see Hubert L. Lagramboise, "Portfolio Structure and a Ministry System: A Model for the Canadian Federal Service". Optimum, Vol. 1, no. 1, pp. 29-45, and Committee on Government Productivity, Interim Report Number Three (Toronto: Queen's Printer, 1971.

63. N.H. Lithwick, Urban Policy Making: Shortcomings In Political Technology", Canadian Public Administration, Winter 1972, p. 579. See also Patrick Best, "STOL port site brews up storm", Ottawa Citizen, January 24, 1973, p. 3.

64. Instant World, op.cit., p. 161

65. Ibid., p. 4.

66. Quoted in 1971-72 Annual Report, Canadian Radio-Television Commission, Ottawa, 1972, p.1.

67. Broadcasting Act, section 3.

68. Ibid., section 22(1)(c).

69. Instant World, pp. 15 and 218.

70. Department of Communications. Telecommission Study 7(a)(b), Regulatory Bodies: Structures and Roles (Ottawa: Information Canada, 1972), p. 32.

71. Ibid., pp. 27-28.

72. Office of the Minister of State for Science and Technology. News Release, "New Contracting Out Policy". Ottawa: August 1972, p. 5.

73. Ibid., pp. 6-7.

74. Ibid., p.8.

75. Ibid., p. 8.

76. Ibid., p. 3.

77. Ibid., pp. 10-11.

78. Some of the questions democratic, legitimacy and accountability in the modern "contract" state are discussed in Bruce L.R. Smith and D.C. Hague, ed. The Dilemma of Accountability in Modern Government. (London: Macmillan), pp. 3-69, and Carl A. Auerback, "Pluralism And The Administrative Process". The Annals, Vol. 400, March 1972, pp. 1-13.

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