DOC

STRATEGIC REVIEW

TASK FORCE ON

INDUSTRY SUPPORT

AND

APPLICATIONS DEVELOPMENT

DRAFT FINAL REPORT

20 May 1993

TASK FORCE REPORT
NOTICE TO THE READER

This **Draft Report**, is one of thirteen **internal working documents**. It was produced by a group of departmental officials from various regions, branches and levels. However, these representatives have been chosen on their own merit but not to represent their sector's interest. The mandate of the Task Force was to assess activities currently carried out by DOC and to develop proposals for consideration by Senior Management in its current Strategic Review exercise.

This document reflects the result of discussions and debates which took place over eight weeks, an extremely tight timeframe. It presents recommendations and suggestions for rationalizing and reorganizing Departmental activities. It is a good first attempt at building creative and innovative solutions. The views expressed are those of the majority of participating members except where stated otherwise and **ARE NOT BINDING** senior management.

The contents of this Report are **PROPOSALS** based on internal discussions relying on the information available at the time. The feasibility of the proposals' implementation has not yet been fully considered, **NOR HAVE THEY BEEN APPROVED BY SENIOR MANAGEMENT.** Cost estimates and associated job savings are approximations and would require further study before they could be confirmed. It is recognized that some information contained in this Report has not been fully substantiated or edited. This reflects the complexity of the subject matter as well as the impossible task of obtaining accurate or requested data for developing recommendations within the short time frame. The limited resources available to the Task Forces also presented challenges. There may be convergence or divergence of views with other working documents which will need to be looked at in context.

The Report will serve to stimulate further debate and discussion on important matters relevant to Departmental activities. There will certainly be further review and analysis of some of the recommendations to ensure an accurate portrayal of the issues.

The thirteen reports are available in the language in which they were prepared. They were delivered to the Department of Communications Strategic Review Committee. Executive summaries are available in both official languages.

RAPPORT DU GROUPE DE TRAVAIL
AVERTISSEMENT AU LECTEUR

Ce **RAPPORT DE TRAVAIL PRÉLIMINAIRE** - un de treize - est le fruit du labeur d'un groupe d'employés du ministère provenant de régions, de directions et de niveaux divers. Il faut toutefois noter que ces employés n'ont pas été choisis comme représentants de leur secteur, mais bien sur la foi de leur propre compétence en regard de la tâche à accomplir. Ce groupe avait comme mandat de réévaluer les activités courantes du MDC et d'élaborer, dans le cadre de l'examen stratégique, des propositions devant être soumises à l'attention de la haute gestion.

Ce document est le résultat de huit semaines de discussions et de débats, soit un échéancier extrêmement ambitieux. Il contient des recommandations et des suggestions visant à rationnaliser et à réorganiser les activités dont le ministère est responsable. C'est là un premier essai d'examen de solutions qui se veulent imaginatives et innovatrices. Ces vues sont celles de la majorité des participants sauf là où une dissidence a clairement été exprimée. Ces rapports **NE LIENT AUCUNEMENT** la haute gestion.

Les **PROPOSITIONS** contenues dans ce rapport sont le résultat de discussions internes alimentées par l'information alors disponible. Le réalisme de ces propositions n'a pas encore pu être pleinement vérifié. **ELLES N'ONT PAS NON PLUS REÇU L'APPROBATION DE LA HAUTE GESTION.** L'estimation des coûts, tout comme les prévisions d'épargnes ne sont que des approximations qui nécessiteraient, pour pouvoir être certifiées, des analyses plus poussées. Nous sommes pleinement conscients que certains des renseignements contenus dans ce rapport n'ont pu être homologués ou édités. Cet état de fait illustre tant la complexité du sujet traité que l'extrême difficulté, voire l'impossibilité, d'obtenir, en si peu de temps, les données sollicitées ou des données fiables sur lesquelles fonder des recommandations et ce, sans compter le peu de moyens dont disposait le groupe de travail. Il est possible que les points de vue exprimés dans les divers rapports soient conflictuels, d'où la nécessité de prendre en compte le contexte.

Ce rapport servira de point de départ à d'autres débats et à d'autres discussions sur les sujets d'intérêt pour le ministère. Certaines des recommandations contenues dans ce rapport feront, certes, l'objet d'examens plus approfondis et d'analyses plus fouillées afin de s'assurer que les enjeux dont il est question y soient clairement définis.

Tous les rapports sont disponibles dans la langue dans laquelle ils ont été rédigés. Ils ont tous été déposés devant le Comité d'examen stratégique du minitère des Communications. Les résumés sont disponibles dans les deux langues officielles.

TABLE OF CONTENTS

1. INTRODUCTION

This Task Force was established to review the activities of the department which support the Canadian communications and information technologies industry and projects dedicated to special applications development.

With respect to industry support, it is recognized that virtually all DOC programs, including telecommunications policy, standards activity and spectrum allocations have important impact on the communications and information technology industries. For the purpose of this review, the Task Force has focused on those activities whose *primary objective* is to develop industrial strengths and meet special needs.

While the focus of industry support is on the supply side, applications development relates to demand. DOC's activities in applications development comprise essentially two major elements;

- accelerating the adoption of new communications technologies and services; and
- developing special solutions to identified needs of Canadians.

This report provides an overview of the industry support and application development activities of the department, including organization and resources assigned to various programs. It also contains a discussion of the environmental changes which may have an effect on the assessment of these activities.

2. TERMS OF REFERENCE

The assignment from the Steering Committee was as follows:

To recommend strategies and processes, including organizational structures, to maximize DOC's leverage and the cost-effectiveness of its programs for industry support and applications development; and to identify measures for alternative program delivery and cost reduction.

The Steering Committee also stated that the review and recommendations were to respect the following:

i) DOC's mandate and its visibility in this area;

ii) Regional presence and its impact on regional development;

iii) Benefits/values of DOC's programs to their client groups;

iv) The changing environment with respect to technology, social economics and public service delivery expectations;

v) Good management policies and practices, including clear accountability for results relative to expenditures and elimination of duplication; and

vi) Minimizing any negative impact on personnel and their aspirations.

The Steering Committee also posed several questions for the Task Force to consider, and after discussion, the questions were finalized as shown in Appendix A.

The membership and structure of the task force is described in Appendix B.

3. SITUATION ANALYSIS

The following addresses the salient questions put to the task force:

3.1 Mandate and Scope of Activities

The Department of Communications Act, para 4 (b) states that the DOC has the mandate over *the development and utilization generally of communications undertakings, facilities, systems and services for Canada.* At para 5. (b), the Act states that *the Minister shall promote the establishment, development and efficiency of communications systems and facilities for Canada.*

The Department has also stated that its Mission is *Nation Building: Helping Canadians share their ideas information and dreams.* In support of this mission, DOC has the responsibility for the development of a world class communications

infrastructure and for ensuring the widest availability and application of communications services and products.

The Task Force members agreed that the objective of the Department's industry support activity is:

> **to help build and sustain Canadian industrial strengths in communications and information technologies so that the industry will be able to develop, establish and market communications products and services to meet Canadian social, economic and cultural needs.**

For Applications Development, the department's objective is:

> **to help users of communications and information technologies to develop and adopt new services and products and to adapt existing ones to meet their specific needs.**

Noting that the wording of the Department's mandate and the above objectives are broad in nature, it is clear that the DOC is not obliged to provide industry support and applications development directly, in the form of department funding and other resources. It is agreed, however, that the prime role of the DOC is to facilitate an environment in which the industry can flourish and satisfy the needs of all Canadians.

3.2 Current Status of Industry Support and Applications Development

Appendix D contains supporting data, including a summary of DOC industry support and applications development activities, with a brief description of each program, the prime responsibility centre, clients of the program, budget and human resources assigned specifically to the activity.

The Task Force was struck by the fact that even with a consensus on the definitions set out herein, it was a very complex task to extract the information shown, bearing out the fact that industry support and applications development projects are being conducted throughout the department, with little overall coordination. This is not intended as a criticism, but rather an observation that there is no single point of contact or leadership for these two program areas.

3.3 Relations with Other Departments

DOC's main partners in industry support and applications development are ISTC and NRC. As well, DOC/CRC will be delivering the Satellite Communications Technology Program on behalf of the Canadian Space Agency.

The Department also works with Atlantic Canada Opportunities Agency (ACOA), le Bureau Fédéral Dévelopment Régional - Québec (BFDR-Q) and Western Economic Diversification (WED) on specific projects. The DOC regions deliver Western Partnership Agreements and Atlantic Cooperation Agreements (Culture only) on behalf of WDO and ACOA. In Québec, the Department works through BFDR-Q for the financing of various projects.

The Prosperity consultations concluded that there is a need for collaboration or consolidation of the government's numerous policies, incentives and programs which relate to industrial support and applications development. *"One stop shopping"* is a common theme. The recent strengthening of the Industrial Research Assistance Program (IRAP) and movement of some ISTC programs to NRC/IRAP is a signal that the government plans to respond.

3.4 Environmental Issues

Appendix C discusses the environmental aspects considered by the Task Force in its deliberations. The main points of this discussion can be summarized:

- Government's role as a player in the current, dynamic marketplace for telecommunications services is becoming much more complex - thus, the traditional "nurturing" approach to industry support may need to be reconsidered;

- Government may have a role as a strategic partner with strong Canadian firms which are targeting on international markets;

- Governments are coming under increasing pressure to reduce costs and increase quality of service to their clients - and telecommunications can be a powerful tool to achieve these objectives, and to get closer to clients;

- Government may have a role as a "first user" of new products or services, provided it is a demanding and discerning user, meeting real needs; and

- The public is expecting government to become "leaner" and to improve access to government information and services.

4. CONCLUSIONS

The following discussion is intended to guide the Steering Committee in setting its priorities and policies, since the Task Force believes that specific recommendations for departmental restructuring or cutbacks would be outside its terms of reference.

4.1 Mandate and Role of DOC

DOC's current industry support and applications development programs can be grouped within the following four categories:

Statutory Mandate and Policy: The department's mandate requires it to foster the development and utilization of efficient telecommunications facilities for all Canadians, through the development of appropriate and timely policies and regulatory practices.

Institutional Arrangements: Agreements and discussions with foreign and other governments, international interventions with and on behalf of Canadian industry, institutional exchange programs and other trade arrangements also comprise a major responsibility of the department. To the extent that some of these arrangements involve commitments by the Canadian government, there may be limited flexibility to reduce them quickly. The implications of withdrawing from them will require careful consideration.

Strategic Initiatives: DOC may initiate strategic programs which would be key to national priorities and economic objectives. The Electronic Highway initiative is one such example, which may involve other levels of government, private industry and public institutions. This *coordination role* in the development of products and services can be a significant undertaking for DOC. In the current environment however, it may be necessary for DOC to act as a facilitator only, rather than using its own resources.

Requested Activities: Public or industry sectors in Canada may request assistance from the government for special purposes. The current program for people with disabilities may be considered an example of such an activity, which would not likely

be undertaken by industry through market forces alone. The impact on the client group would be the prime consideration in any cutback scenario.

4.2 Current Resource Levels

The data on current resource commitments to industry support and applications development as shown on page 9 of Appendix D can be summarized as follows:

	PYs	G&S ($000)
Communications Industry Prog.	22.37	$3,281
Information Technology Industry Prog.	24.10	$3,420
Support to CCMC & Disabled People	3.35	$424
Cultural Support Prog.	2.00	$177
International & Regional Prog.	18.10	$1,596
Total	69.92	$8,898

4.3 Program Review

The Task Force believes that its Terms of Reference basically pose the following key question: "Can DOC run its program for industry support and application development differently, to achieve:

- cost reduction in program delivery?
- higher recognition of its related activities (visibility)? and
- more impact on its client groups?

The Task Force considers it important that in this round of program review, priorities are established for DOC's activities. Some of the questions to be considered during the review are:

- What is expected of DOC?
- What are the value-added services provided by DOC?
- What are the market or policy interventions that DOC must make for the benefit of the Canadian economy and Canadians?
- What are the trends in information technologies which could be leveraged for the benefit of Canadians with leadership and coordination from DOC?

Current programs can therefore be reviewed using the following approach:

i) The framework identified in Section 4.1 can be used for classifying programs. The impact of not continuing these activities (or not at current levels) must be determined.

ii) Special strategic thrusts, such as the Electronic Highway initiative must be identified. All Industry Support and Applications Development activities should be related to these thrusts and prioritized.

iii) Expenditure management should be reviewed vis-à-vis revenue generation. Excess capacities, revenue generation potentials and any other resource utilization should be considered before pondering any major cuts.

iv) Alternative program delivery mechanisms should be investigated. Is it necessary to have R&D and production facilities in-house? What are the implications of outsourcing them? How could electronic channels be leveraged for program delivery at lower costs? Can other levels of government be used for program operations? For each program element at least one alternative delivery mechanism should be identified and impacts assessed.

v) Organizational restructuring should be considered, especially in regard to improving services to clients. Consideration should be given to integrating some functions without sacrificing performance.

A full program review based on the above approach should result in a new vision and several options for program delivery and organizations.

4.4 Principles for Program Review

While pursuing the above approach, the Task Force believes that reviewers should consider the following principles and apply them to all program elements:

i) Program effectiveness must be measurable by its client groups (i.e. Industry, Public).

ii) Programs must support (and be seen to support) the federal government's vision and strategic objectives (e.g. the Electronic Highway vision and strategic IT objectives)

iii) Program activities should be prioritized to maximize "value-added" service to its clients (i.e. beyond what they can achieve on their own).

iv) Program activities which can be better and more appropriately done in the private sector should be outsourced or left to the private sector.

5. RECOMMENDATIONS

5.1 Introduction

The Task Force believes that the most positive contribution it can make to the decision process is to provide a framework for organizational restructuring that would result in a more focused approach by the department to its industry support and applications development activity. The current structure has been seen to be cumbersome, both by many managers within the department and the industry itself. The recommendations set out below suggest two possible approaches to reorganization, both of which will require some reassignment of responsibilities and clearly, some disruption to existing operations. However, it is believed that either option is better than the current arrangements.

The last part of this section provides some guidance on how to achieve target budget reductions. It is not prescriptive, but meant to provide some insights for a rational decision process.

5.2 Organizational Change

Before any budget reduction scenarios are entertained, the Task Force recommends that serious consideration be given to rationalizing the program portfolio dealing with industry support and applications development to achieve greater efficiency, to improve the visibility of the department's contributions to these areas and to improve communications with the stakeholders in the industry and the community generally.

As noted already, the Task Force has found that this area involves many units of the department and limited coordination amongst them. There are real opportunities to achieve savings through the streamlining of the management of related programs and the reduction of overlapping activities being conducted both in house and contracted out.

The Task Force recommends that the following two options be considered:

Option 1: Central Coordination Mechanism

Under this option, there would be a single responsibility centre (DGCP or equivalent organization) responsible for coordinating all DOC industry support and applications development activities. This would be its prime responsibility, and any policy-related activities would need to be coordinated with the appropriate unit of the department.

Advantage:

One point of contact for industry and the public for all programs.

Disadvantage:

Departmental expertise may not be utilized optimally.

Option 2: "Office of Prime Interest" for major projects

Under this option, each major program would have a single point of contact. An example of a major initiative would be the Electronic Highway - which currently involves several units within the department.

Advantage:

It would achieve a closer match between expertise and responsibility for each program.

Disadvantage:

Smaller projects would still be managed on an ad hoc basis and there would be an additional load on departmental executive, who would have to assign prime responsibility, and monitor performance.

5.3 Regional Role

It must be stressed that whether the centralized management approach or office of prime interest approach were adopted, the regional offices would continue to play a vital role in performing their brokerage responsibility with client organizations and strategic partners across Canada. Either change would be more functional for

regional managers, who would deal with only one contact for each of their various programs.

5.4 Marketing

The Task Force notes that there are several areas within the department which are involved in the marketing of the technology and skills developed through DOC programs. There is a feeling amongst the group that this arrangement may not be optimal, but it was agreed that the revenue generation potential of program results should be maximized, and that coordinating the effort may help.

5.5 Budget Reduction Scenarios

The Task Force was asked to consider the implications of three budget cut scenarios. This has been discussed in depth and the Task Force has concluded that the 5% cut scenario need not be examined at this point, since it is essentially being implemented now. Moreover, it is recommended that the 25% cut scenario should be examined very closely, since a 10% cut could be subsumed within the resultant structure. The severe cut analysis is considered prudent at this time, since it forces a serious prioritizing of DOC activities in this area and positions the department for any further cutbacks that may be mandated downstream.

Budget reductions of this order may require the complete elimination of certain activities, and drastic reductions to others. The options to be considered can include:

1. 25% Cuts "Across the Board"

Under this option, all managers with responsibility for industry support and applications development would have their budgets for this purpose reduced by 25%. At this level, the target for the department in this area would be approximately $450K budget reduction per year for five years (i.e. $2.25 million overall reduction from current levels). The advantage of this approach is that managers with knowledge in their areas of responsibility would determine where the cuts would occur. The disadvantage is that it does not distinguish amongst elements of the program portfolio and does not recognize that some programs may not contribute as much as others.

2. Targeted Cuts to Selected Programs

After several years of continued cuts, the current complement of programs is probably at the bare minimum to do the job, and further reductions will affect the Department's ability to achieve its mission.

Nevertheless, if cuts are essential, programs that contribute less to the overall mission should be the first to be considered for elimination or serious diminution.

Under this option, major program expenditures would be evaluated against the set of principles outlined in section 4. Those programs that adhere less well to the principles would be identified as candidates for elimination.

Some programs that should be considered carefully include:

- Satellite Industry Support - has the space industry matured enough that it can rely on less government assistance? How has the creation of CSA changed the requirement for continued DOC assistance?

- The Canadian Centre for Marine Communications - would the Centre survive without government assistance?

- CWARC's Exchange Program - could we live with the impact of reducing or eliminating this element of the CWARC program?

- Social Programs - could we live with the impact of reducing or eliminating social applications programs (disabled etc.)?

- Marketing Support - can marketing assistance activities be curtailed?

- Market and Technology Studies - what are the implications of reducing market assessment studies? Is information available from other less costly sources?

- Industry Support Facilities - how much revenue can the DOC facilities such as the Standards Test facilities and Clyde Ave Lab generate? If they do not generate sufficient revenues to recover costs, should they continue? Can they be privatized?

The above questions have been posed to Task Force members with knowledge of the various areas and in Appendix E, they provide a discussion on each of them, following a set format, so that the implications of reducing or eliminating each one can be assessed.

Additional analysis is clearly required, and it must be undertaken with care and sufficient consultation with both clients and sponsors. This would take some time, perhaps six months to a year for the larger and more complex program components. Moreover, since this is essentially a balancing of departmental priorities and different client groups needs and perceptions, the process must be undertaken carefully. It is also noted that the process of analysis will doubtless consume financial and other resources, and produce tensions within the stakeholder organizations internally and outside the department. Thus, the "design" of the review process is crucial, as well as the bottom line objectives.

3. Program Cuts through "Attrition"

Included in the complement of DOC activities identified in the report are two "sunset" programs, the Canadian Centre for Marine Communications and the program for people with disabilities, both of which are programmed to be terminated in two years. In addition, there are programs with logical "renewal" times in their futures. Such programs could be considered for termination at the end of their commitment periods.

The obvious advantage of this approach is that it is relatively painless to those programs that are considered "continuing", and there would be minimal disruption to perceptions of the department's program portfolio. However, there is still the question of whether the department is running its existing portfolio effectively, and whether the "waiting" approach would actually achieve the bottom line reductions called for.

APPENDICES

ISSUES

The following issues were identified to the Task Force by the Steering Committee. The original set of written questions from the Steering Committee have been modified and restructured somewhat, but the thrust of the original queries has been retained.

1. What is:
   a. DOC's mandate ?
   b. industrial development?
   c. applications development?

2. To what extent do DOC's programs and activities vis-à-vis research, funding, licensing, standards, telecom policy, marketing support and applications development contribute to DOC's mandate?

3. What should be the division/delineation of responsibility between DOC and other departments (e.g., ISTC, Regional agencies)?

4. Is Application Development primarily aimed at Canadians for those user needs not met by the market or aimed at industry as support to product and service development? How relevant is Applications Development to DOC policy development? Is AD aimed at end-users or industry? or, end-users through industry? or, both?

5. What should be the connection between programs and activities dealing with in-house research, applications development, support to industry, standards and policy?

6. Is there a need, and what should be the approach, for a common framework to coordinate related programs and activities within DOC, investment under regional economic agreements, licensing agreements, etc.?

7. Is there a need to consolidate applications development and industry support responsibilities into one organization/branch? Are there other alternatives for alignment of related inter-branch activities?
   What alignment is compatible with fostering local creativity across the country, and the best approach to harmonization with various provincial authorities?

8. In addition to (4) above, what improvements are necessary and what alternative program delivery should be established to maximize the DOC's overall role in this respect?

9. What activities should be curtailed under 5, 10 and 25% budget reduction scenarios? What kind of new investments are necessary to reflect changing environment and client needs?

10. What is the division of responsibilities between the regions and headquarters in this area? Is it appropriate? In the context of decentralization of resources, should regional capabilities for industry and applications development be strengthened?

TASK FORCE ORGANIZATION

The following individuals comprised the task force:

René Guindon	PGTA	Chairman
Richard Paukstaitis	DCP/GTA	Secretary
Dan Sum	VPD/GTA	
Andy Kwan	DSI/ADMRS	
Susan Baldwin	DGNM/ADMCP	
Mary Frances Laughton	DPP/ADMRS	
Paul Wilker	DCD/PCRC	
Ed Skomorowsky	DTP/ADMRS	
Hervé Déry	DGCR/ADMPM	
Stu McCormick	DRL/PCRC	
David Waung	DSP/ADMPM	
Larry Shaw	DFR/ADMCP	
Bev Mahony	DTP/ADMRS	
Alain Robillard	DDT/SMAQ	
Stu MacPherson	GTA/EDP	
Mike Connolly	EDO	
Martin MacLellan	EDA	
Keith Chang	DMS/ADMPM	
Jean-François Bernier	SMAPC/ADMCP	
Ann-Marie Juwah	CHIN/ADMAH	
Gilbert deCouvreur	CCRIT/SMAQ	
Balaineh Deguefé	EDC	

The assignment of work was as follows:

i) **Task Force**
(Plenary; 5, 10 & 25% reduction impacts; report and recommendations - draft: 26 April; final report: 21 May)

Chairman:	R. Guindon
Secretary:	R. Paukstaitis (Interim)
Members :	(As approved)

ii) **Focus Groups**

(1) . Definition (Mandate, Application Development, Industry Support)
. Existing DOC programs activities, resources and client groups

. Existing DOC programs activities, resources and client groups
. Performance evaluation measurement
. (Issues 2, 4)

Leader: Ed Skomorowsky (DTP/ADMRS)
Members: Mary Frances Laughton (DPP/ADMRS),
Paul Wilker (DCD/PCRC)
(input from Susan Baldwin)

(2) Changing Environment, Alternative program delivery, DOC new initiatives required for cost saving purposes,
(Issues 8 & 9)

Leader: Stu MacPherson (GTA/EDP)
Members: Mike Connolly (EDO)
Ed Skomorowsky (DTP/ADMRS)
Hervé Dery (DGCR/ADMPM)

(3) Common Connection/Thread
(Issues 5, 6, 7, 10)

Leader: Mary Frances Laughton (DPP/ADMRS)
Members: Andy Kwan (DSI/ADMRS)
Anne-Marie Juwah (CHIN/ADMAH)
Jean-François Bernier (SMAPC/ADMCP)

(4) Mandate and Division of Responsibilities
(Issues 1, 3)

Leader: David Waung (DSP/ADMPM)
Members: Hervé Dery (DGCR/ADMPM)
Keith Chang (DMS/ADMPM)
Alain Robillard (DDT/SMAQ)
Martin MacLellan (EDA)
Bev Mahoney DTP/ADMRS

(5) Report Drafting/Editing

Leader: D. Sum (GTA)
Members: Stu MacPherson
one member from each of Focus Groups 1, 3, & 4
Task Force Secretary

ENVIRONMENTAL ASSESSMENT

Introduction

This section will deal with features of the environment which could influence the department's support to industry and applications development. What has occurred in the environment which would prompt a reassessment of existing programs? What criteria should be applied to evaluating existing and proposed programs? We will look at three elements of the environment, the industry itself, governments and the public's expectations of governments.

The Industry

Recent CRTC decisions and consequential developments in the industry have resulted in an unprecedented increase in the degree of competition in the sector throughout Canada. The scope of the CRTC decision opening up the long distance telephone market is much greater than previous decisions, not only since it opens up the most profitable market segment, but also because of the extension of the Commission's jurisdiction to virtually all major Canadian carriers.

Key Developments in Telecom Market

- the rapid introduction of innovative new services priced and marketed aggressively nationwide;
- increased pressure from the carriers on the CRTC for cost-based pricing of local services (public reaction and opposition from competitors will be difficult for the CRTC to ignore, however);
- entry of foreign suppliers and carriers, through joint ventures, equity positions etc.;
- pressure from the carriers to relax the regulatory agenda and "let them compete" (again, there will be opposition from competitors who feel the CRTC is needed to keep the carriers in line);

Industry support measures must recognize that market forces are becoming stronger, more complex and influenced by international trends. The traditional "nurturing" programs should perhaps be reconsidered in light of the fact that the marketplace will now make decisions more rapidly than government can adapt. It should also be noted that support to particular firms can be very hazardous as more market entrants appear. The race will be to the swift and government may not be equipped to provide the kick start to a player that isn't already positioned to compete effectively.

Access to Basic Service

The carriers are calling for a reduction in their "social" role as instruments of public policy to the extent that they have subsidized basic service from more profitable areas of the business and provided service to underserved areas and subscribers with special needs. While this is a natural outcome of the movement to market-determined behaviour, the regulator can continue to require the general body of subscribers to "subsidize" certain elements of the companies' service package.

There may be a need for a greater role for government in ensuring that special needs are met. Clearly, this could influence the priority of certain applications development initiatives.

Technological Innovation - New Services

This area would normally be left solely to the marketplace, but the department continues to play a role in promoting the development of new services in partnership with companies or groups with promising, but high risk technologies. In the past, this has met with mixed results and some argue that the marketplace is better than government at making these judgments, as was the case with government-supported programs such as Telidon.

The question may be posed as to the role of government in stimulating the introduction of new services. An alternative may be for the government to take on the role of "first user", and as a test of the viability and marketability of a new service or technology. Even this approach must be undertaken carefully, and government must be a demanding and discerning user, meeting a real need for cost reduction or service to the public.

Globalization of the Industry

This development is evolving very rapidly. Canadian firms must now compete on an international scale for their very survival. Northern Telecom tried the "offshore" market in the '60s and pulled back, only to find a ready market in the USA as that market opened up. Now, Northern is competing on a worldwide basis, to increase its revenues, but also to survive. The recent alliances between Bell/MCI and Unitel/AT&T are related. It has been suggested that the Bell/MCI connection was a natural, since MCI is a Northern Telecom user and Bell needed access to MCI's network management platform. The replacement by the "new" Unitel of its NTL switches with AT&T equipment was necessary to their merged operation. Strategic alliances such as these are occurring literally worldwide. One must compete in all markets to make it.

There may be a role for government in all of this, as a leader and strategic partner with Canadian companies, but primarily to create an environment in which they can flourish and one which domestic and foreign investors will find attractive. (The government's role as a strategic partner for Canadian industry in the international marketplace is being addressed by another Task Force.)

Government

Governments at all levels in Canada are coming under increasing pressure to reduce costs and at the same time, increase quality and responsiveness to the needs of the electorate. These conflicting factors are leading governments to seek ways in which technology can be used to improve the efficiency and effectiveness of program delivery. Initiatives such as PS2000, CAR and others are examining approaches to electronic service delivery. Thus, the government as a user of telecommunications can be a powerful medium for achieving policy objectives, especially in the area of industry support.

Governments of developing countries are recognizing that they must quickly acquire a state-of-the-art telecommunications infrastructure in order to be competitive on a global basis. These governments are, therefore, entering into partnerships with foreign companies to ensure that the services and facilities are in place to more rapidly achieve agreed national goals for the distribution and availability of such services.

The trend toward the introduction of free markets for telecommunications is also a global phenomenon. Many developed countries have made the move to a "deregulated" environment and privatization or corporatization of government telecom operations has been completed, or is underway in many nations.

One of the drivers behind this trend is the reduced funding available to governments generally. Reliance on private sector initiatives and market forces is becoming a political and economic necessity and telecom happens to be an excellent candidate for such treatment. Some governments in developing countries are reluctant to move, since in many cases, the telephone company has been a "cash cow", funding other activities from international toll revenues in particular. Pressures in the GATT and other international fora are making the harnessing of these revenues increasingly awkward however. Thus, governments of all political stripes are finding it easier to consider privatization as a benefit.

Public Attitudes/Expectations

The Canadian public has responded to recent surveys[1] with a high degree of scepticism about government generally, coupled with growing concerns about the economic future of Canada.

However, there is also evidence that Canadians are becoming more comfortable with technologies such as telecommunications and computers and believe that they are important to the future of the Canadian economy.

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[1]Drawn from two departmental documents: "Canadian Views and Attitudes, Feb. 1993, and "Canada in 1993: Outlook for Communications and Culture".

They favour reductions in the size of the civil service, assistance to arts/culture and road construction, among others. At the same time, they are looking for social services to be maintained or increased, and training and education to be enhanced to permit Canadians to take advantage of technological developments.

There is a growing emphasis on "people" management, as opposed to "product/information" management, with a call for consumer needs to be met with systems and processes that are easy to access and use. Clearly, electronic access to government information is a part of this evolution in thinking.

For the purpose of this exercise, we can reasonably conclude that the public would expect a "leaner" department, sensitive to the needs of Canadians to be able to use telecommunications to improve their quality of life. Moreover, they would probably support programs that would promise to keep Canada at the forefront of technological development, as one of the keys to future economic prosperity. But they would expect to see the "payoff" prospects very clearly and early.

In terms of the public's expectations from industry, it is becoming clear that the public and business communities are becoming restless with the pace of innovation and responsiveness of service providers in the new competitive marketplace in Canada. The market is still in a developmental phase, with new players now resisting change to the pricing regimes that attracted them to the market in the first place. That is, now that the CRTC has let them in, they want to limit entry and price reductions. This will not likely last, but again, the public is getting impatient. This impatience will manifest itself more openly in response to recent rate rebalancing proposals from the telephone companies.

PROGRAM EVALUATION CRITERIA

In its search for concise criteria for assessing programs, the Task Force has considered the following questions:

a) In what areas of industry/application development must the department play a role, especially areas where funding support is needed to achieve public policy goals?

b) Given that the first priority items leave some budgetary "room" for programs to stimulate business development and foster innovation for the overall economic good of Canada, where is the government's involvement essential, due to market or policy-related failures?

c) Having identified the second tier programs and perhaps some of the resources available, what modes of involvement are available? Options include direct funding, joint venturing with other governments, joint venturing with private

sector firms etc. Where can the department get the most "bang" for the ever-diminishing bucks? The most likely areas are where we can bring in private sector participation as a "sanity check" on the priorities.

d) Should all projects/programs require industry financial participation? There is a consensus that for all programs aimed at developing marketable products or services, it should be mandatory for industry to contribute substantially. Perhaps there should be thresholds imposed, so that programs cannot be initiated without some minimum buy-in by industry.

e) Should programs focus on uniquely Canadian problems? Bearing in mind the mandate of the department, any program which cannot be linked to specific Canadian needs could be suspect. However, support for the development of export markets is generally seen as a legitimate role for government.

The above are clearly not the criteria we are looking for, but the questions posed may provide some insight into the form that program evaluation criteria might take.

INDUSTRY SUPPORT AND APPLICATIONS DEVELOPMENT DATA

This Appendix contains data pertaining to Industry Support and Applications Development as follows:

INDUSTRY SUPPORT AND APPLICATIONS BY CLIENT SECTOR

Communications Industries	Description	Clients
Industry Development (DGCP/DPP/DAI)	Industry support through collaborative activities including contracting-out, technical consulting, technical seminars/publications, training and support to standards policy	- Aboriginal industries - Database industries - Datacasting industry
Space Industry Development Program (DGCP)	Cost shared contribution program to develop advanced and innovative satellite communications technologies and services	- Canadian space industries such as SPAR, CAL, COMDEV, TRL, Optotec, MPR Teletec, and Marconi
SCAP Satellite Applications Program	The program demonstrates or field trials new satellite related technologies to prove and test new satellite services and products leading to commercialization	- Program used extensively for Olympus KA band application trials
Technology Transfer (CRC)	Technology Transfer Office (TTO) actively markets and licenses DOC's intellectual property to industry to develop communications infrastructure and to diffuse its technology	- Satellite and space industry - Wireless and personal communications companies - Microelectronic and Opto-electronics companies - Defence communications companies - Broadcasting industry - Common carriers
Contracting-in (CRC)	CRC provides access to R&D services, technical consulting, and use of unique facilities	- Same as Technology Transfer
IRAP Project Management (CRC)	CRC manages telecom sector IRAP projects on behalf of NRC. Provides good leverage of IRAP funds to transfer CRC technology	- Telecoms sector
Broadcast Industry Applications (CRC)		
Industry Collaboration (CRC)	Joint R&D projects to develop Canadian communications products and infrastructure	- Same as Technology Transfer

Industry Support and Applications by Client Sector

Information Technology Industries	Description	Clients
Informatics Applications (DGCP)	Demonstration and field trials of new communications products and services	
Exchange Program (CWARC)	The exchange program allows experts from public, private, or university organizations to be seconded to CWARC to participate in research into the technological applications of office automation	- Any Canadian Organization - Canadian Colleges and Universities
Contribution Program (CWARC)	Contributions to the development of a critical mass of expertise in the development of information technologies and communications	- Any Canadian Organization - Canadian Colleges and Universities
Integrated Resource and Information Service (CWARC)	Collects, organizes and distributes scientific information in support of CWARC projects and personnel	- Government and Academic institutions - Information Technology Industry - Organizations collaborating with CWARC
Systems Interconnection Research (DSI)	Provides industry support through tasks such as in-house software/system development, national and international standards development, establishment of national infrastructure for the provision of strategic services and regional and international harmonization of technical issues.	

Industry Support and Applications by Client Sector

Disadvantaged	Description	Clients
Disabled Program Applications (DGCP)	Applications of new and existing technologies are investigated and tested to improve communications and access to information for persons with disabilities	- Canadians with disabilities - Canadian industry which supports Canadians with disabilities

Industry Support and Applications by Client Sector

Marine Industries	Description	Clients
Support to CCMC (DOC)	DOC provides both funding and in-kind support to develop the marine communications industries in the Atlantic Region. The DOC commitment to CCMC is configured as follows: total project value of $10.1M with DOC contributing $1.5M, Marine Institute $1.1M and ACOA $7.5M. A CWARC contribution agreement has recently been signed for $1M in contribution and it is expected that these funds will be leveraged 2.5:1.	- Marine Industries

Industry Support and Applications by Client Sector

Cultural Industries	Description	Clients
Canadian Heritage Information Network (CHIN)	Service program that uses off-the-shelf technology to convert and maintain heritage information resources in a form that makes them accessible through new technologies	- Museums and Heritage Institutions - Educational Institutions - Libraries
Publications Distribution Assistance Program [Planned]	A component of the PDAP will provide assistance for the orderly development of a Canadian distribution Network for Books Update and improvement of databases of Canadian and foreign book products and acquisition of software and hardware material	- Canadian Distributors, libraries and book stores - Book Publishers - Professional Associations

Industry Support and Applications by Client Sector

Industry Support and Applications Programs	Description	Clients
Trade Development (DGIR)	In cooperation with EAITC, DOC provides support to Canadian industry in the communications sector in their export trade activities	- Companies in the areas of: telecom networks and systems; satellite communications; spectrum management; cable television; broadcasting; data communications
B.C. Regional Office	Perform various industry support activities Perform applications development activities including project evaluation, funding support and strategic alliance building	
Ontario Region	Act as liaison between DOC, CRC, CWARC, IRAP and industry Coordinate/cooperate federal/provincial relations on industry support initiatives	
Atlantic Region	Performs various industry support activities and applications development including; project evaluation, project development, funding support and strategic alliance building.	Private and public sector clients in the 4 Atlantic provinces covering the broad DOC and CWARC industry portfolio.
Industry Development (SMAQ)	Programs administered by DDT (SMAQ) include: - R&D incentive program for communications area. It provides supplementary funding and leverage for innovative projects - Standardized programs of FORD-Q including Innovation Assistance Program - Montreal Development fund of FORD-Q - IRAP - Programs of other federal organizations including: ISTC, Transport development centre, External Affairs, Employment and Immigration	

Industry Support and Applications by Client Sector

C&IT	Description	Clients
Technology and Market Assessment (DGCP)	Assessments of communications and information technology, markets and trends to allow for better informed industrial policy making in DOC. This data is also used to support DOC's activities in support of other government departments	- Senior management in DOC - Other government departments
Applications Development (DGCP)	Trials, projects and demonstrations of new and existing communications and information technology to meet user needs	- Government end-users - Wireless and personal communications companies - Common carriers

INDUSTRY SUPPORT AND APPLICATIONS by CLIENT SECTORS

CLIENTS	BRANCH	PROGRAMS AND ACTIVITIES	FTE	COST ($000)		LEVERAGE ($000)			NOTES
				S+G&S	G&C	MATCH	INCOME	OGD	
Communications Industries	DGCP	Industry Development (1)	4.10	$387					
	DGCP	Space Industry Dev't.(2)	2.46	$186	$2,500	$2,500			
	DCD/CRC	Satellite Appl. Program(3)	2.85	$1,268		$300		$200	
	DCD/CRC	Technology Transfer(4)	4.05	$408			$310		New Authority (I)
	DCD/CRC	Contracting in BDO(5)	2.00	$80			$200		New Authority (2)
	DCD/CRC	IRAP Prog. Management(6)	1.01	$104				$2,000	
	DGBT/CRC	Broadcast Industry (7)	1.30	$155					
	CRC	Industry Collaboration (9)	4.60	$693					
Information Technology Industries (C&IT)	DGCP	Informatics Applications(10)	1.00	$150					
	CWARC	Exchange Program(11)	1.00	$1,770					
		Contribution Program(12)			$6,000				
		Information Distribution(13)	6.00	$125					
	DSI	Standards Applications(14)	2.33	$314					
	DGCP	Applications Development(15)	5.07	$366					
	DGCP	Tech. & Mkt. Assessment(16)	8.70	$695					Note (5)
Marine Industries	DOC	Support to CCMC(17)	1.00	$300	$240	$1,700		$8,600	Commitment (3)
Disadvantaged	DGCP	Disabled Program Appl.(18)	2.35	$124		$600		$200	
Cultural Industries	CHIN	Heritage Info. Network(19)	0.50	$42			$50		
	DGCI	Publ. Dist'bn. Assist. Prog.(20)	0.40	$20	$1,000				Note (7)
	SMAQ	Industry Development(21)	1.10	$115					
All The Above	DGIR	Trade Development(22)	6.00	$600					
	SMAQ	Industry Support & Applications Programs(23)	3.50	$290	$500	$500		$6,000	Note(6)
	EDA		1.10	$150	$310	$600		$1,450	
	EDO		1.00	$100	$535	$1,880	$10	$1,750	
	EDC		4.50	$291	$6,000	$9,600		$1,700	Note(8)
	EDP		2.00	$165	$500	$500		$500	Note(4)
TOTAL			**69.92**	**$8,898**	**$29,343**	**$16,980**	**$570**	**$15,500**	
					$38,241			**$33,050**	

Explanatory notes for the table:

This table was set up to look at expenditures by client sector and to identify specific industry sectors that are directly assisted by industry support and applications programs and DOC.

S+G&S = Salaries + G&S

Match = matching funds contributed by industry

Income = revenue retained from licensing, royalties, contracting-in

OGD = Funds levered from other government departments as a result of DOC contributions to assist C&IT and Cultural Sectors

NOTES:

1 & 2. Revenues from licensing and contracting-in can now be retained as a result of new authorities achieved for CRC/CWARC last year. These new revenues should increase as CRC and CWARC roll out their business plans.

3. The DOC commitment to CCMC is configured as follows: total project value of $10.1M with DOC contributing $1.5M, Marine Institute $1.1M and ACOA $7.5M. A CWARC contribution agreement has recently been signed for $1M in contribution and it is expected that these funds will be levered 2.5:1, with this projection shown under match. The DOC and CWARC funding support is multi-year with total figures and projections averaged over a 5 year cycle.

4. The Canada/BC Agreement on Communications & Cultural Industries Development is expected to be signed in 93/94. The Agreement is valued at $10M ($5M GOC & $5M BC Government) and another $10M is expected to be levered from industry. These figures are NOT reflected in Table 1 as the Agreement has not been signed to date.

5. This activity is policy and infrastructure related activity and as such allows for better and more informed decision making both inside and outside of DOC. In some cases, there may be leverage but it is incidental to the expense and not directly attributable to the DOC intervention.

6. Programme d'incitation à la R&D pour Montréal ($2.5M over 5 years). Le PIRD sert de levier à d'autres sources de fonds, dont le BFDR.Q Innovatec grand Montréal. L'objectif fixé est de 30M$ d'ici cinq ans.

7. Following the decision to phase out the book rate of the postal subsidy pro9gram, the Department announced that the compensatory measures would be developed. Following industry consultations, a new program, the PDAP, has been submitted for Treasury Board approval.

8. EDC manages three 5-year Canada/Provincial agreements in Communications Technology totalling $30 million in matched Fed./Prov. fundingg. The agreements were signed at various times from Sept. 1991 to Nov. 1992, with funding continuing to March, 1997. Alberta, Sask. and Manitoba each matched a federal contribution of $5 million.

PROGRAM ANALYSIS

In this section, the programs set out in Appendix D, Page 9 are analyzed by individual Task Force members representing the organization responsible for the activity, showing in each case, the potential savings to be realized from elimination of the program and an impact analysis, discussing government priorities, impact on DOC's mandate, clients and partners. It should be stressed that the material has not been discussed by the Task Force as a group.

Note too, that there are several activities "missing" from this section, as they are being reviewed by other Task Forces, particularly the one dealing with research.

Activity #1 - Industry Development (DGCP)

1. Description of Activity:

a. - activities related to assessment of Proposals for funding under various programs such as ISTC DIPP, STP, and MSDP;

DGCP is a member of each of the evaluation committees. Any proposals concerning communications are evaluated and recommendations are made to the committees.

b. - support to the licensing and regulatory functions of the department;

One example is the evaluation of the CT-2 Plus licensing applications for industrial and technological impacts. A second example is membership on the Mobile Satellite Policy Committee. Economic and industrial development issues were examined.

c. - continued support to the Vision 2000 consortium with 50K per year membership and coordination of issues with the consortium;

d. - assistance to the regional offices on proposals & programs related to ACOA and WDO funding.

2. Options for Budget Reduction:

If these activities were eliminated, there is no other apparent activity centre within DOC with the mix of skills and the necessary objectivity needed to deliver these activities. The activities cannot be done outside the department as policy development issues are involved.

3. Potential Savings:

$387K in salary and G&S

4. Impact on Government Priorities:

The elimination of the above activities would impact the ability of ISTC to evaluate communications related proposals related to $100 million in programs annually. Economic and industrial development concerns would not be adequately addressed in other government priorities such as Regional development through ACOA and WDO to whom the above activities provide assistance through the regional offices.

5. Impact on DOC's Mandate:

Cessation of the above activities would seriously hamper DOC's ability to foster the development of the communications infrastructure in Canada. Other departments programs would be lost to DOC's influence for maximizing the leverage available to ensure orderly development and non-duplication.

6. Impact on DOC's Clients:

The communications industry would lose the advocacy of DOC for proposals submitted to other government programs with a probable reduction in the number of successful and funded projects. Internally, the regulatory and licensing branches would not receive support on industrial and economic issues.

7. Impact on DOC's Partners:

ISTC, ACOA and WDO lose the expert inputs on industry communications proposals and result in duplication of technology proposed to be developed and therefore result in wasted funding.

8. Other Considerations:

When assistance and cooperation with other departments is withdrawn, as would be case if the above activities are terminated, then the DOC would begin to find itself increasingly isolated and bypassed on many other initiatives important to the department's mandate. The regional offices would lose a central contact. There would be duplication of effort in the regional offices on such things as studies and assessments and there would be no oversight of technology development on a national basis.

Activity #2 - Space Industry Development (DCD/CRC)

1. Description of Activity:

Management of an ongoing Contribution Program for the development of advanced satellite communications technology. This Program(SID) is funded in 1993/94 at $2.5 million. Industry cost shares the development projects, usually at 50%. Other government departments programs are also

levered to share in the project costs. Advanced satellite payload technology, such as superconductivity, Gallium-Arsenide Monolithic Microelectronics, switching hardware for antenna systems and others are developed by industry in order to remain competitive in the world market. The new technologies developed are then available to provide services to Canadians, as is the case with the new Anik-E satellites launched last year. Other SID projects involve the investigation and planning of new satellites for Canada such as the Advanced Satcom Program(Ka Band) proposed in the new Space Plan. Feasibility studies and initial design work over the last three years has been funded by SID without which the proposal for the new Space Plan would not have been feasible.

2. Options for Budget Reduction:

If the management of the SID Program is eliminated, the Contribution funding is most likely to be taken by the Space Agency. CRC would seem to be a logical choice for picking up the Program but as an institute with the mandate to retain revenues, it would be in a conflict of interest. With the best of intentions, it is likely the Program funding would be used to favour those companies that contract into CRC in order to meet the revenue generation mandate. If the CSA was successful in obtaining the SID Program then the DOC mandate for satellite communications would be in question. Satcom is not a priority of the CSA and it is certain that the funding would be applied to other priority areas such as remote sensing and space station.

3. Potential Savings:

$186K in Salary and G&S

4. Impact on Government Priorities:

The elimination of the management of the SID Program would impact the government priority for an advanced communications infrastructure in Canada. Satellite communications is the only method of delivering advanced communications to Canadians outside of the major centres which have fibreoptics.

5. Impact on DOC's Mandate:

Giving up the satellite communications mandate to CSA would seriously impact DOC's ability to develop advanced satellite communications and thus an advanced Canadian communications infrastructure.

6. Impact on DOC's Clients:

The satellite communications industry, including the service providers, would lose yet another source of funding for advanced technology development. DOC's influence on the satcom industry would be greatly diminished.

7. Impact on DOC's Partners:

Without direct funding assistance, the Canadian industry and other government departments and agencies would have no need to consult DOC in the development of advanced technology for satellite communications. The current partners would likely fund less satcom related research if DOC was not in an advocacy/funding role.

8. Other Considerations:

The SID Program is the only ongoing funded satcom technology development program in the department. Without it, the department is effectively out of the satcom business and would be in a reactive rather than a proactive position in the development of new satcom technology.

The department pioneered satellite communications in Canada and is recognized as a world leader in advanced satcom. The reason DOC is in satellite communications is because of the mandate to provide communications services to all Canadians, no matter where in Canada they reside. Access to all, sovereignty, and national security were the initial reasons for satcom. Now in addition, is the necessity for the most advanced communication system possible in order to facilitate the economic recovery and keep Canadian industry globally competitive. Satellite communications will play an increasingly important role in national and international communications infrastructures.

There is a misconception that satcom is mature and needs no further support by DOC. This is totally wrong as satcom is currently undergoing a technical rebirth with a wealth of new concepts and new technologies. Higher frequencies, on-board computer switching, optical and digital beam forming, miniaturized satcom receivers and power amplifiers and superconductivity utilized in the receivers and filters are only a sample of the new components which have yet to be developed.

Activity # 3 - Satellite Communications Applications Program (DCD/CRC)

1. Description of Activity:

Management of an ongoing Program funded at $1.1 million per year in A-Base for the development of new satellite communications services.

The satellite communications applications program(SCAP) funds the development of terminal equipment and the field trials for new satellite communications services. Users and service providers are directly involved in the application projects. An example of a current project is the development and trial of a small terminal at the Ka Band frequency for use with the Olympus satellite.

The SCAP Program has been instrumental in the past in establishing new services in the north and to aboriginal Canadians. An outstanding example was the impetus which began the Inuit

Broadcasting System which is still in operation. Many other trials resulted in practical applications such as a stabilized satcom terminal for off-shore oil rigs.

2. Options for Budget Reduction:

If the management and Program are eliminated then there is no other organization in the government which will pick up this activity.

3. Potential Savings:

$1,268K in Salary and G&S(includes $1.100K Program)

4. Impact on Government Priorities:

The elimination of the SCAP Program would impact the governments priority of providing advanced communications to all Canadians. Satcom is the only feasible means in sparely populated areas of Canada. The development of new and innovative satcom applications would no longer be undertaken.

5. Impact on DOC's Mandate:

Giving up the SCAP Program would seriously impact DOC's ability to develop advanced satellite applications and thus services to Canadians.

6. Impact on DOC's Clients:

Canadians would lose potentially valuable communications services and Canadian industry would lose the opportunities of developing new terminals and the chance of commercializing the equipment and services.

7. Impact on DOC's Partners:

Service providers and terminal equipment manufacturers would not have access to government funding for development of new services. Some of the potential services would not be undertaken by industry alone due the unknown market demands and the investments required.

8. Other Considerations:

The SCAP Program is the only funded applications program for satcom in the department and indeed the only known program of its kind in the government.

Activity #15 - Applications and Research Policy Development

1. Description of Activity

- activities related to the development and deployment of advanced communications applications that directly benefit users such as government-wide service delivery initiatives like Info Centres, test bed projects like the Public Information Network Communities (PINC) that will provide advanced services to select test communities over networks. PINC would generate savings estimated at over $1.5 billion p.a. (from electronic bill paying and electronic phone directories alone).

- activities related to the brokering of advanced applications projects of national interest such as the Intelligent Vehicle Highway System (IVHS). IVHS will reduce accidents and congestion on the nations highways and generate billions of dollars in savings to citizens and industry alike.

- community-based networking projects such as the promotion and facilitation of Free Nets. This includes activities such as the upcoming Free Net conference in August '93 liaison with National, American and International community-based networking groups and associate Internet related activities. These activities are focused on providing value-added service to all Canadians and, on creating links to the information-based society in Canada.

- activities related to the development of a research policy framework for the Department focusing on DOC user needs for research, industry research priorities and select issues such as privacy.

2. Options for Budget Reduction:

If these activities are cut they will not be taken up by other elements within the government or the Department. The focus of these activities is on application delivery to the end user with emphasis on improving economic efficiency and providing value-added services to the public at large. The policy elements will be dispersed or abandoned, which will result in potential conflicts between the objectives of various Departmental units and a loss of R&D resources leverage in industry.

3. Potential Savings:

$366K in salary and G&S.

4. Impact on Government Priorities:

The elimination of the above activities would result in lost opportunities to expand services to all Canadians while generating economic efficiencies within the Canadian economy. In addition, there would be lost opportunities for Canadian technology developers and service providers to participate in consortia or projects facilitated by government with a view to developing Canadian capabilities and products that could eventually be sold around the world. There will be a loss of synergy between government and industry pulling together in a common direction.

5. Impact on DOC's Mandate:

The activities outlined above are central to the core of DOC's mandate -- providing advanced communications applications and services to the benefit of all Canadians. Focusing on the development and deployment of communications applications and providing the environment in which individual Canadians can be empowered is fundamental to the raison d'etre of DOC. DOC will not have a clear focus with respect to its R&D needs -- from a client perspective.

6. Impact on DOC's Clients:

The direct beneficiaries of these activities are the public at large. Users will not have the benefit of Canadian solutions to their unique problems (eg bilingual community based networking). Industry will not have the opportunity to create products and services in a Canadian market place.

7. Impact on DOC's Partners:

As most of these activities are delivered in partnership either with the private sector or other Government Departments (such as ISTC, universities, CANARIE Inc, CA*net) the direct result of withdrawal from these activities would be a loss of momentum, creativity, leadership and a unique perspective that brings the interests of the public/end user to the table.

8. Other Considerations:

Given the increasing liberalization of the Canadian Telecom Sector, Canadians will have more ready access to foreign-based communications services. DOC needs to considerably strengthen its activities in applications development in order to make sure Canadian value-added services and content are available to Canadians. It is the only way to promote Canadian identity and cultural sovereignty in the context of global markets and economies. It is also key in promoting the prosperity of the Canadian economy as the service sector is a large creator of wealth and jobs.

<u>Activity # 16 - Technology and Market Assessment</u>

1. Description of Activity:

Environmental scanning and statistics are components of our intelligence role to assist DOC decision-makers, and input to setting priorities and directions for DOC research activities and the development of applications and industry support programs. Strategic assessment studies of approximately $160k were sponsored in 1992-93 to obtain expert opinions and user perspectives on key technology trends, user needs and market opportunities over the next five to ten years. Canadian R&D strengths, weaknesses and foci were analyzed from a Canadian viewpoint and an international perspective. As well, DGCP publishes statistical profiles on the communications and information technologies industries, R&D activities, and user penetration of various technologies and services.

DGCP is the DOC focal point for dealing with science and technology related issues and policies addressed by central agencies. For example, this includes reviewing and responding for DOC, in consultation with relevant branches, to correspondence and recommendations from the National Advisory Board on Science and Technology, from the Prosperity S&T Task Force and government departments. DGCP also coordinates DOC's inputs to the ADMs Committee on S&T and plays an important role in the subcommittees dealing with Finance and with Intellectual Property.

DGCP represents DOC and Canada's position at the OECD Expert Group on Economic Implications of Information Technology (EIIT). It deals with issues such as IT diffusion, the economic dimensions of standards, high speed computing network developments in U.S., Japan and Germany, IT policies and the role of government in member countries. This provides the international perspective on S&T related issues.

2. Options for Budget Reduction:

If the DGCP intelligence role is eliminated, it is unlikely that anyone in DOC will pick up the activity. Most likely we would become dependent on ISTC and industry for information and their views of key trends and events. The disadvantage of this is that DOC's mandate is focused on the communications needs of Canadians in contrast to their focus on the competitiveness of the C&IT industry.

The science and technology issues which deal with NABST, central agencies, and government priorities such as Prosperity have to be handled by DOC - whether DGCP or another branch, but none has the broad overview or intelligence role that DGCP has in the areas being discussed nor the link to research policy and applications development.
Some of the OECD/EIIT activity could be taken by ISTC. However, DOC would lose some credibility as a key participant in C&IT; lose valuable and cost-efficient information from our international contacts; and lose the opportunity to influence the OECD workplan towards DOC interest areas.

DOC's inputs on issues such as the ownership of intellectual property under Crown contracts involving R&D and international negotiations on IP could be covered by CRC but their focus would be on the operational and management aspects of intellectual property rather than from a departmental policy viewpoint.

3. Potential Savings:

$695K in Salary and G&S

4. Impact on Government Priorities:

DOC must have a focal point and participate in a coordinated fashion to government wide S&T initiatives aimed at prosperity and the economic agenda of the government. These discussions deal with issues such as science and technology priorities, technology acquisition and diffusion, human

resources, government procurement, federal science and technology expenditures (Lortie report), intellectual property policies, R&D financing, and evaluations and best practices of government laboratories. This provides an excellent opportunity for DOC to present its concerns and recommendations to the government and other departments and agencies.

5. Impact on DOC's Mandate:

DOC has a responsibility to conduct environmental scanning and an intelligence dissemination role in communications matters as stated in the DOC Act, para 5E " compile and keep up-to-date, detailed information in respect of communications systems and facilities and of trends and developments in Canada and abroad relating to communications matters." The loss of this information would seriously impact DOC's ability to develop policies and programs to encourage the orderly development of the communications infrastructure, and to play a role in encouraging advanced communications services to meet the economic, social and cultural needs of Canadians.

6. Impact on DOC's Clients:

The communications and information technology industries as well as industry and user associations, academics, provincial governments and the public are all clients for DOC's intelligence on communications matters.

In terms of the OECD/EIIT, many industry and academic sources as well as provinces and other departments have the opportunity to participate or influence the workplan of an important international forum through providing comments or statistics related to OECD activities and priorities, or attending special sessions or meetings.

Intellectual property policies have a major influence on industry in terms of IP ownership and royalty payments under Crown contracting out of R&D; international trade negotiations and strategic partnering. As well, DOC considers the interests and concerns of the communications industry and end users in its comments and recommendations on various science and technology government proposals, such as changes to the R&D tax credits and S&T priorities.

7. Impact on DOC's Partners:

Without this intelligence and advocacy role in terms of communications development and planning and S&T policies, other government departments and agencies as well as Canadian industry would lack the DOC knowledge and recommendations in areas of mutual interest. This information contributes to developing a common understanding within the department and with our partners of the communications and information technologies, strategic partnering opportunities and applications needed for continued Canadian economic growth and social development.

8. Other Considerations:

DGCP is the only group conducting ongoing environmental scanning of key trends of concern to numerous branches in DOC, including CRC and CWARC. In addition to sponsoring studies,we monitor numerous sources and subscribe to Gartner and A.D. Little among others to track new developments and assessments of areas of interest to communications development and planning. This information has been used by ourselves and other branches in senior management briefings and speeches, in industry consultations, as input to other government departments and international requests for information, and as government available information for public knowledge.

Activity #17 - Canadian Centre for Marine Communications

1. Description of Activity:

CCMC is an applications research centre contributing to product development, formation of industry consortia and facilitating the enhancement of the Canadian industrial base through "value added" engineering and industry support activities, primarily targeting marine communications.

2. Options for budget reduction:

DOC's remaining commitment for the start-up phase for CCMC, i.e. 1989-96 is approximately $500K. These funds were agreed to under a Memorandum of Agreement with the total funding package configured as follows: ACOA, $7.5M, Marine Institute $1.1M and DOC $1.5M for a total of $10.1M. DOC is seen as a "science source" for this initiative, with our funding commitments being modest in comparison to the other partners.

3. Potential Savings:

The dollar savings may be in the order of $500K but there are a couple of caveats: Note, approximately $180K of this money is covered by the secondment of 1 FTE (Roy Marsh) for a period of 2 years and there has been no hard cash set aside to meet the remainder of our commitment. Thus, potential savings must be addressed in this context.

4. Impact on Government Priorities:

Regional Development is a long standing Government priority and CCMC has been an "important instrument" of regional development in Atlantic. CCMC is currently flowing through $1M of CWARC funds into industry, levering these funds at the ratio of 2-3:1 and spurring much industrial development as a result of this initiative. As a footnote, Matrix Technologies of St. John's recently won a $1.8M contract in Singapore which is directly attributable to a $100K investment by DOC in CCMC.

5. Impact on DOC's Mandate:

CRC & CWARC projects & programs have for the most part utilized by Ontario & Quebec companies. CCMC has balanced this central presence by extending DOC's influence and science pool availability beyond its traditional boundaries. In that sense, CCMC, has played a meaningful and important role extending DOC's mandate and access to CRC & CWARC technologies in Atlantic Canada.

6. Impact on DOC's Clients:

Industry development, client relations and relationships between DOC and federal-provincial clients would be severely curtailed. CCMC is a pivotal entity in Atlantic Canada, at a time when our resource industries have become marginalized and we are refocusing to address the options afforded by science and technology and its role as an economic enabler.

7. Impact on DOC's Partners:

As noted in earlier statements, CCMC is a vital infrastructure in Atlantic. On behalf of DOC, it has forged alliances and partnerships with university, corporate and public sector entities. They are seen and in many ways act as an extension to DOC... our service delivery would be seriously hampered without CCMC.

8. Other considerations:

- Loss of gateway to Atlantic marine industry and significant "value added" to the applied research pool of CRC;

- Loss of royalty and license revenue stream to CRC & CWARC on commercialized technologies;

- Loss of 6:1 leverage on scarce DOC funds;

- Loss of vital industry-technology support at a time in Atlantic history when it is most needed....ie. resource industries being marginalized;

- Complete loss of DOC & CRC credibility amongst federal, provincial and private sector clients; and

- Loss of 16 full time, high-quality jobs in Newfoundland, at a time when this province needs this type of support.

Activity # 18 (and 10) - Informatics Applications & Social Programmes

1. Description of Activity:

These activities can be considered in two portions.

The first is the National Strategy on the Integration of Persons with Disabilities. The activities included R&D projects, field trials, information dissemination and standards support.

The second is a group of social applications such as support to standardization of Aboriginal syllabics, support to the Canadian database industry, efforts with the broadcasters on datacasting, seniors issues and telework studies.

2. Option for Budget Reduction or Potential Savings:

The National Strategy is funded from an allocation specified by the Treasury Board along with some DOC base. The TB portion of the monies cannot be cut nor can it be reallocated. These funds are for this and the next two fiscal years.

If the DOC support were removed, the TB portion of the money could not be used effectively. There is no other group who can or would carry out these activities.

The other activities (roughly $150K/year) would not be done if DOC did not do them. The budget has been pared to the bone. The only option is to not do these activities at all.

While they could be cancelled, they are relatively low cost, high leverage and have a clear target audience who have grown to expect this level of activity.

3. Potential Savings:

see above

4. Impact on Government Priorities:

Support to people with disabilities is a stated Federal Government priority. The PM announced the five year plan as one of his priorities on September 6, 1991. For DOC to withdraw would create a visibility problem for the Minister.

The other activities are all part of the social policy agenda as stated by the Government.

5. Impact on DOC's Mandate:

These activities all are derived from the DOC mandate to improve communications for all Canadians. Some of the projects provide a link between the cultural and the technology side of the Department.

6. Impact on DOC Clients :

All these activities have a clear target audience, most have industrial or OGD partners and the impact would be negative. Devices would not be developed and R&D would not be completed.

7. Impact on DOC's Partners:

In many cases, project, trials etc are being carried out in partnership where DOC funds are a necessary element to secure other funding. To withdraw would cause many of these projects to fail or cease activity.

8. Other Considerations:

none

Activity # (New Item) - Certification and Engineering Bureau - (Clyde Ave. Lab)

Note - this item was added to the complement of issues for the Task Force somewhat late in its work program.

1. Description of the Activity

(i) Describes and as necessary, develops, precise repeatable test methodology to be incorporated in Mandatory Radio Standards and Terminal Attachment Equipment Standards.

(ii) Establishes achievable and economically sustainable measurement accuracy limits for (i) above.

(iii) Assesses engineering briefs produced at private laboratories for conformance with specifications, and issues certifications.

(iv) Maintains an up-to-date certified radio equipment list used by licensing personnel at all District Offices; issues labels to be attached to terminal equipment indicating compliance.

(v) Conducts statistically valid audit testing to ensure compliance of certified equipment with standards during product life.

(vi) Runs a minimal Ionosonde Program mainly for the Department of National Defence.

2. Options for budget reduction:

There would be savings in the order of about $2 million. However the program generates more than $2.3 million in revenues for labels, assessment and testing will also results. This $2.3 million is currently returned to the CRF, and if the function were terminated, it is likely that Treasury Board would retrieve the $2 million A-base from the Department. Also, it is not certain as to who would take up the responsibility. It is not likely to be a function that can be performed by private industry since this is DOC's regulatory mandate, which often involves the resolution of conflicts between interested industrial parties.

3. Potential Savings:

See above.

4. Impact on Government Priorities

See below.

5. Impact on DOC's Mandate:

- The Department would not be fulfilling its mandated responsibility under the Radiocommunication Act. A core activity of the spectrum management program would not be performed thus making the rest unworkable.

- The Department would not be fulfilling its obligation to CRTC for the Terminal Attachment Program (TAP) Activities obtained from the CRTC Decision 82-14 under the Railway Act, and for Canadian Interconnect Liaison Committee (CILC) from Decision 92-12. Both functions are mandatory.

- The Department's integrity would be put into question.

- Effective licensing of radio equipment would not be possible.

6. Impact on DOC's Clients:

DOC's clients in this respect are manufacturing industries, distributors and service providers.

- Failure to do this would have adverse effect on the public switched telephone networks and impact the competitive supply of terminal equipment.

- Canadian industries ability to introduce emerging technology will be affected. e.g. compressed audio and video digital equipment, thus adversely affecting the availability of the new radio and telecommunication services to the Canadians.

- Canadian industry would be at a disadvantage to foreign suppliers.

7. Impact on DOC's Partners:

- Obligation of MOU with DND to supply real time ionospheric data will not be met and occurrence of heavy shutdown costs ($1 million at Resolute Bay to bring the Arctic Remote Site to its original state as required by the environmental regulations).

- Reciprocal testing agreements currently in place would be discontinued as there would be no more advantage to such agreements for other administrations, seeing Canada had no standards.

8. Other Considerations

none

Activity #19 - Canadian Heritage Information Network

1. Description of Activity

CHIN's Technology Assessment Centre was created in order that technology could be assessed for its application to the museum community. This enables CHIN to provide better advisory services to its clients and it saves to museum community from duplicating these investigations and assessments. Another goal was to advise private industry on the needs of the museum community so that they would develop and market better products and more products for the museum community. The TAC has set up a demonstration area to show the results of its work.

One of the ways that the TAC meets these objectives is to work on projects with the community and with the private sector, often using one museum's needs and one set of technologies - to investigate the technology, demonstrate its application to the museum communities needs while producing a product or application for a particular museum. The TAC demonstrates the products to visitors at CHIN and at conferences, thus sharing the results. The partners, both museum and private sector also demonstrate and promote the results. This promotes the technology and indirectly the private sector company. As a result of one of the projects CHIN entered into, the private sector partner obtained several other contracts to implement projects using a particular new technology (CDI).

Some of the products developed as a result of these joint ventures have been put on the market with a percentage returning to CHIN as revenue, thus recovering some of the costs.

2. Options for Budget Reduction

Since promoting of industry and technology is only one of the objectives that is being met by CHIN's TAC projects, it is not felt that this activity could be cut without affecting the whole activity. CHIN was given this program as a result of the Museum Policy of 1990 because at that time there was no other organization that could meet these objectives. This is still true today. The Heritage Task Force is looking at CHIN and its activities. Their recommendations should be looked at before one is made here. From CHIN's point of view, TAC is one of its higher priority activities.

3. Potential Savings

N/A

4. Impact on Government Priorities

See Museum Policy of June 1990

5. Impact on DOC's mandate

See Museum Policy of June 1990

See also the Heritage Task Force's recommendations. If they would like CHIN's clients to take more responsibility, the TAC's work will be required to facilitate this. The TAC could assess new products and advise the community, without favouring one vendor over another. The TAC could provide common user requirements to the private sector for museum specific applications (eg collections management) based on CHIN's experience with the needs of the museum community.

6. Impact on DOC Clients

The museum community would not receive the quality of advice it has been receiving resulting in it having to use its already stretched resources to do work, perhaps many times at many different locations, that the Department has been providing. There would be much duplication of effort. Industry would continue to provide few tools and inadequate tools to meet this communities needs.

7. Impact on DOC's Partners

Industry would continue to provide technology solutions that do not meet the needs of the museum community, thus not selling technology to the museum market.

Activity #20 - Publication Distribution Assistance Program

1. Description of activity

Note: The PDAP is not yet operational.

Following the decision to phase out the Book rate of the postal subsidy program, the Department announced that compensatory measures would be developed. Following industry consultations, a new program, the PDAP, has been developed. The Treasury Board Submission for this Program is currently in the system for approval.

One main objective of the PDAP is to encourage the development of an distribution infrastructure which would include the creation and upgrading of title databases and the acquisition of software and hardware appropriate to user needs (particularly for on-line ordering, and order confirmation) within the various sectors of the book trade in Canada.

Eligible under the Program are Canadian book distributors and professional associations and agencies representing the Canadian book trade sector.

Although initially to be administered by Department officials, the plan is to transfer the administration of PDAP to the Industry.

2. Options for Budget reduction

No other public or private sector organisation could take up the responsibility for the program at this time, as it is a new initiative and may require adjustment in the early stages of operation. It should be noted that i) it will not generate revenues and ii) the administration costs are estimated to be at their minimum under DOC's administration.

3. Potential Savings

None

4. Impact on Government priorities

PDAP has been developed to replace the Book Rate Program and focuses on Canadian Book trade which has cultural and economic impacts.

5. Impact on DOC's mandate

DOC's mission focuses i) on the communications systems that link us by carrying our information and values and ii) the availability of Canadian cultural products and information services.

6. Impact on DOC Clients

As with other cultural sectors, distribution is one of the key factors in ensuring a viable domestic industry. U.S. distributors are fully computerized and offer on-line ordering and confirmation. At this time, the Canadian industry cannot compete. It is essential, therefore, that the Department address this issue as a funding priority.

7. Impact on DOC's Partners

No impact

8. Other considerations

None

Activity #22 - International Trade Marketing Support

1. Description of Activity

The International Marketing Support unit of DOC provides support to Canadian companies in the communications sector in their export marketing activities. This is carried out in close cooperation with EAITC and other departments and agencies. Specific activities include establishment of bilateral institutional relationships, participation in trade shows and exhibitions, organization of missions, seminars training sessions and direct support to companies on specific projects.

2. Options for Budget Reduction

A small portion of the activities could possibly be undertaken by EAITC. However, in most cases, DOC carries out international marketing activities where DOC possesses unique strengths, including technical expertise or special bilateral relationships with its counterpart ministries. It would therefore not be possible for EAITC or other organizations to take up the responsibilities, if this activity is eliminated.

3. Potential Savings

The cost of this activity is estimated to be approximately $600K per year.

4. Impact on Government Priorities

This activity is in direct support of the government's International Competitiveness and Prosperity Initiative.

6. Impact on DOC Clients

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7. Impact on DOC's Partners

No impact

8. Other considerations

None

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3. Potential Savings

The cost of this activity is estimated to be approximately $600K per year.

4. Impact on Government Priorities

This activity is in direct support of the government's International Competitiveness and Prosperity Initiative.

5. Impact on DOC's Mandate

This activity is closely related to DOC's mission of Nation Building. It serves to strengthen Canadian industry so that they are able to respond to Canadian needs and be competitive in today's global market place.

6. Impact on DOC Clients

Many of the export-active and export-ready companies in the communications sector are the clients of the DOC in this activity. The recently completed evaluation confirmed the important and unique role that DOC plays in supporting their export activities. Termination of this activity will have significant negative impact on these DOC clients.

7. Impact on DOC Partners

The most important partner of DOC for this activity is EAITC including the trade commissioners at Canadian embassies. DOC provides sectoral support to complement EAITC's trade development activities, and the results have been highly positive. EAITC would lose an important, and, quite often, indispensable partner if this activity were terminated. It would not be possible for EAITC to take up the responsibilities as they are under even more serious resource constraints. Moreover, they do not have the technical expertise, institutional linkages, nor staff continuity to replicate the functions.

8. Other Considerations

Canada's trade development efforts in the telecom sector, which have been very successful to date, would suffer a serious setback if this activity were terminated.