IRDP EVALUATION STUDY
REPORT

PREPARED FOR THE
PROGRAM EVALUATION DIRECTORATE
OF INDUSTRY SCIENCE AND TECHNOLOGY

DECEMBER, 1990

Young & Wiltshire

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EXECUTIVE SUMMARY

Purpose

The Departmental Audit and Evaluation Committee (DAEC) meeting of May 29, 1989 approved the conduct of a program evaluation study of the Industrial Regional Development Program (IRDP) for fiscal year 1989/90 to take a retrospective look at lessons learned from the delivery of the program.

Approach

Our study issues focused on usage, adequacy of support, design and delivery mechanisms, results, and program instruments. The study used nine lines of enquiry to address the issues including a comprehensive literature review, analysis of PRISM data, interviews with 37 project/program officers, 3 regional development expert interviews, 21 case studies, a review of 298 project summaries, a survey 372 recipients, a survey of 100 rejected applicants, and a survey of 101 firms assigned to a comparison group which had not used the program.

Findings (s.1,3,4,5 and 6)

Program Usage (s.3)

The population served, from a regional perspective, can be described by relating the dollar value of offers accepted to the value added in manufacturing between regions. Both the Atlantic and Quebec regions received significantly more assistance relative to their value added while Ontario received less. This may indicate that the regional skewing of assistance did, in fact, favour less developed areas, when compared to the relative industrial strength of the region. However, other factors such as differences in the number of staff serving a particular area or differences in program awareness may also explain this skewed effect.

A similar comparison was also made for the major industry groups. The major industry groups (those which received significant amounts of assistance under the IRDP) accounted for 48.1% of total manufacturing value added in 1985 but received 65.2% of total assistance to 1986 (the most recent year for which data was available to date). The electronics, machinery, and, to a lesser extent, transportation equipment industries, were favoured by the program as compared to their relative share of manufacturing value-added.

The pattern and level of IRDP usage was close to its potential given the experience of predecessor programs, the level of promotion, and the delivery processes of the program.

Adequacy of Support (s.4)

There was generally adequate flexibility and comprehensiveness in IRDP assistance, however, market feasibility studies were not supported as frequently as may have been warranted. Problems arose in interpretation in some areas. Also, problems sometimes arose regarding the delivery of funds after costs had been incurred, causing cash flow problems for small companies.

The level of financial assistance available under IRDP was generally sufficient, however significant problems occurred when payment expectations were set for recipients at levels which subsequently were not met.

While the evidence is not conclusive, it appears that the tier system may have imposed more of an administrative burden than it was worth. In addition, the tier system may have limited innovation projects in tier 1 by imposing restrictive cost-sharing norms.

Design and Delivery (s.5)

A strong awareness and understanding of the funding agency, in this case DRIE, was the most important factor in program promotion. Awareness of IRDP followed most often from direct contact with the Department. Contacts with colleagues and brochures were also significant promotional tools, however the latter evidently generated some false expectations as to level of assistance.

Project officers played an important role in providing advice to applicants, given the complex nature of the application process. Among small, less sophisticated applicants, officers also had an important educative role.

The application process clearly constituted a barrier to optimal take-up of the program assistance. Some of the information requirements were inappropriate for smaller projects, the assessment process was inconsistent through time and unworkable in certain respects, and project officers ability or willingness to work closely with an applicant was very important to application success.

The key criteria used by officers to assess applications were economic incrementality, company viability, project viability, benefits to the region/Canada, and project level incrementality. Individual officers generally had their own weighting scheme and key indicators to determine these criteria, quite separate from official guidelines.

Financial projections and return on investment calculations were not generally used by officers to assess projects but rather they often served to justify judgements made based on qualitative criteria. ROI calculations were particularly problematic in this regard.

There were some suggestions that a less elaborate form of monitoring would have sufficed for establishment and expansion projects and that more technical monitoring of innovation projects was required. Financial control appears to have been adequate in most cases, however, the monitoring of repayable contributions was perceived as insufficient.

Results (s.6)

IRDP's project incrementality (impact attributable to assistance) was relatively consistent with similar programs reviewed, although IRDP may have had a few more cases with no attributable impacts than the norm. Incrementality varied significantly by element (higher for innovation, lower for modernization/expansion and establishment) and by region.

Projects undertaken with IRDP assistance were more likely than any other types of project (i.e. those undertaken by rejected applicants, as well as those undertaken by non-applicants from the comparison group) to be successful. These projects were successful, not only based on the impressions of the recipients but also in terms of a positive effect of the project on several aspects of the company's market position.

While IRDP succeeded in redistributing funds to disadvantaged regions, qualitative evidence indicates that IRDP was likely of limited impact in terms of producing significant regional economic benefits.

IRDP - Eight Years After (s.7)

The Program Review Task Force (PRTF) of DREE-ITC in 1982 set out the principles of an 'ideal' program. Our findings can be considered in light of the principles set out for the ideal program at that time.

The Harmonization of Regional and Sectoral Development Strategies

IRDP never truly harmonized regional and sectoral strategies. The impression from our review is that former ITC officers continued to emphasize sectoral development, while former DREE officers continued to concentrate on regional development. This was evident in the different emphases placed by different offices and sub-groups on the five basic criteria used (see Section 5.4). In addition, our literature review, program, and project officer interviews revealed that the program never really promulgated a consistent overall strategy. IRDP, as the flagship of DRIE, really symbolized the bifurcated mandate and operations of the Department.

Support for all Aspects of the Corporate Development Cycle

The rules of IRDP clearly allowed for all aspects of the corporate cycle to be supported. The de facto interpretation and implementation of those rules tended to polarize assistance around capital assistance and innovation, the traditional domains of RDIA and EDP. Market feasibility was never emphasized, establishment projects were limited, and climate and restructuring elements were eliminated after one year.

Assistance Geared to Prospects for Success, Firm Development Plans, and Knowledge of Why Assistance was Received Would be Key

IRDP projects were clearly geared to successful projects and companies, based on firm plans, and required detailed knowledge of why companies needed assistance, Unfortunately, this emphasis may have formed a bias against small firms, truly innovative projects, real project-level incrementality, and economic incrementality. Our findings show that the companies which had the easiest time receiving assistance were medium-large firms with straight forward, low risk capital acquisitions. One could argue that such companies are not the primary targets for regional industrial assistance programming.

Costs and Risks are to be Shared

IRDP succeeded in increasing the private sectors' share of risk over what it has been under previous programs. Unfortunately, as noted above, this mitigated against certain small firms and risky projects which may have merited government support.

Enriched Support Provided to Firms Disadvantaged by Size or Location

Our findings show that IRDP clearly favoured firms in disadvantaged regions. In terms of firm size, however, our results indicate that because of the preponderance of relatively large firms in advantaged areas doing innovation projects, the program was not significantly more generous to small firms in terms of cost-sharing ratios.

Comprehensive Assistance at the Local Level

This principle was never implemented. In fact IRDP operated at less than half the delegated authority level proposed for Regional Directors in the program for most of is existence. (The program operated at 0 level delegated authority for a significant portion of this time - see Section 1.3.3.3).

Lessons Learned from the Study Issue Analysis (s.7.3)

Program Promotion

Consistent program promotion is essential to optimal program take-up, administration, user satisfaction, and results. The IRDP clearly promised more than it delivered, resulting in significant failures in many aspects of the program. Not withstanding the political constraints to properly promoting programs, designers of future programs would be well advised to pay considerable attention to appropriate promotion. In as much as programs are an intended 'good' for a specific target group, it would seem appropriate to conduct market research for these programs similar to that conducted by private companies selling financial services, industrial products, and other services. Consultation with knowledgeable sector experts prior to promotion campaigns would also assist this process.

Directly Applied Sector Expertise

Global competition, shortened corporate and product development life-cycles, and an increased 'information content' and complexity in all goods and services groups will put a premium on the application of sector expertise to future programs. Our study showed that the proper application of sector expertise was a critical success factor for projects. The maintenance of strong networks with sector experts in technical, marketing, and financial domains will be important. One consideration for future program delivery is to maintain a significant budget to buy the time of experts to consider specific cases or groups of projects.

The Use of Market Feasibility Studies

As noted above, understanding an increasingly complex industrial marketplace is a critical success factor for regional industrial projects. Our findings showed that marketing feasibility studies provided information which was often noted as critical by respondents - sometimes because they *saved* a poor investment from occurring. Some resistance was found among current delivery officers in terms of using this type of study. Ways and means must be found to ensure that these attitudes will change if future programming is to stay relevant to target groups.

Close Consultation

Given the increasing need for information and applied expertise for all types of development projects noted above, future programs will need to find ways to ensure close and frequent contact with applicants and recipients. Our findings showed that contact was key to setting user expectations, addressing user needs, performing adequate assessments, and properly monitoring projects. The problem is that frequent contact takes human resource time; a resource in short supply given current government person-year constraints. Creative approaches, possibly such as that employed by the Industrial Research Assistance Program (IRAP) of NRC in terms of cost sharing PYs with other governments/departments and the private sector might be considered.

Authority Delegation

With increased complexity comes an increased need for the direct application of knowledge to situations in the assessment and management of projects. Assuming that appropriate overview controls can be implemented, our findings show that it would seem appropriate to delegate authority to the full extent possible while still maintaining a full communications linkage with other delivery agents, and senior program management.

Streamlined Assessment Procedures

Time is becoming an increasingly important factor in competitiveness. As such, response times for funding programs must be minimized while still ensuring that key program criteria are met. One interesting finding from our study is that streamlining the process does not necessarily mean streamlining (or eliminating) the forms. In fact, officers noted that the more explicitly that initial information requirements can be presented to program applicants, the less time is wasted by all parties. From this perspective, some of the application techniques developed by Special ARDA and other programs dealing with small business in remote regions may be useful as models for future programs. A quick pre-screen process for applicants would also appear warranted, as would graduated information requirements for projects of different sizes.

Selection Criteria

The selection criteria for IRDP, beyond basic eligibility requirements, have remained the same in the minds of most officers over the past 20 years of funded program assistance. The key criteria include:

i) project incrementality
ii) economic incrementality
iii) project viability
iv) company viability
v) benefits to the region/Canada

The problem is that different weightings are given to these factors by different officers. IRDP, as directed by the Auditor General in 1984, tried to impose a complex set of explicit subquestions for these criteria. It didn't work (see s.5.4). Future programs must try to find a way to maintain these basically sound decision factors, but implement them in a consistent way. Perhaps a first step would be to develop a consensus and common vision as to what these concepts mean, then to develop a case book of significant precedence which can be referred to as required by delivery officers. (The precedence method is currently being used by the Western Diversification Office).

Focus on the Firm

Past and current policy thrusts have tended to consider funded assistance programs as policy tools for regional development, job creation, and more recently, Canadian investment in new strategic technologies. With these policy goals at play it is easy to lose sight of the fact that the direct clients of the department are individual companies. Our survey, case studies, and expert interviews indicate that the most successful programs, especially for innovation projects, follow companies through the development cycle and are able to adapt to the needs of the client.

Application of Lessons Learned to Future Programs (s.8)

Appropriate Activities

Current programs tend to assist a broader spectrum of early innovation activities (e.g. market feasibility analysis) than did previuos assistance programs. This emphasis appears to be appropriate from our analysis of IRDP results. The significant danger which new programs face is a lack of coordination and policy consistency caused by a proliferation of innovation programs offered by federal and provincial governments.

Instruments for Innovation Assistance

The optimal program instrument for innovation assistance in Canada appears to be one which offers flexible and decentralized delivery while maintaining consistent central principles and ensuring linkage to national technology, marketing, finance, and general management expertise. Of the options considered, an adjusted IRAP model would appear best suited to ISTC innovation program and delivery.

Program Promotion

Current ISTC programs show preliminary indications that they are falling prey to similar promotional problems which plagued IRDP. Efforts appear warranted to enhance promotional material and to appropriately brief all delivery officers about the strategic, tactical and operational aspects of these programs.

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	Sec. 5.0	Program Design & Delivery
What have been the results?	Sec. 6.0	Results
What have been the key lessons learned?	Sec. 7.0	Alternatives
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1.0 INTRODUCTION

1.1 Purpose and Scope of the Study

1.1.1 Need

The purpose of this evaluation study is to provide senior management with lessons learned from the past IRDP experience of DRIE that can assist in the development of future programming within ISTC.

1.1.2 Objective

The Departmental Audit and Evaluation Committee at its meeting of May 29, 1989, approved the conduct of a study to take a retrospective look at the lessons learned from IRDP primarily in the areas of program design, delivery and programming alternatives.

1.1.3 Scope

The scope of this evaluation will include all aspects of IRDP in respect of design and delivery and the linkages of these to program results. The program elements of marketing, innovation, establishments, and modernization/expansion will be covered. Climate and restructuring elements will not be reviewed because of their relatively short life span and take-up. It should also be noted that programs to which certain IRDP projects were devolved such as the Western Diversification Office (WD), Atlantic Canada Opportunities Agency (ACOA) and Industrial Research Assistance Program (IRAP) are outside the scope of this study.

1.2 Structure of the Report

This study was driven by the issues agreed to by the Study Steering Committee and approved by the Deputy Minister in the Spring of 1989. While we have structured the report by issue group, we have also laid the report out in such a way as to address the key elements of program performance. Exhibit 1, opposite, illustrates this linkage.

Chapter 1 describes the nature and structure of the study report. It also provides a detailed description of IRDP that includes an analysis of its rationale, the method of its design and delivery, and a model of its impacts and effects.

Chapter 2.0 sets out the design of the evaluation study, the research methodologies used and the key issues which were researched. It also provides a section on the constraints and limitations of the analysis.

Chapter 3.0 through 8.0 provide the analysis done under each major issue area. Each chapter provides background on the issue areas and questions addressed. It then presents findings, conclusions and resulting observations for each issue question.

1.3 Profile of the Industrial and Regional Development Program

The Industrial and Regional Development Program (IRDP) was intended to be the Department of Regional Industrial Expansion's principal means to deliver direct federal assistance to industry from 1983 to 1988. It constituted a major funded support initiative for the Department. To March 31, 1988, a total of $1,258,060,708 in assistance was provided to 4,192 projects. In the first year of the program's operation, the IRDP was also the primary tool for assisting in the development of tourism.

IRDP provided assistance under six program elements as follows:

- Industrial Development Climate;
- Innovation;
- Establishment;
- Modernization and Expansion;
- Marketing; and
- Restructuring.

1.3.1 Mandate

Two acts of Parliament provided a legislative basis for the IRDP. The DRIE Act (SC 1980-81-82-83 c,167) provided the Minister with a broad mandate to assist Industry in all phases of the corporate development cycle and to promote economic development in Canada's less developed regions.

The Industrial and Regional Development Act (SC 1980-81-82-83 C. 160) served as a basis for the provision of financial assistance to eligible persons and commercial operations for purposes of industrial development in all regions under the IRDP. The Act refers to the Industrial and Regional Development Regulations for a definition of "commercial operation" which is defined as follows in Section 3:

"a party,

(a) carrying on or about to carry on a manufacturing or processing operation,

(b) carrying on or about to carry on a tourism operation, or

(c) carrying on or about to carry on an operation that is of a class of operations, within the service industry, designated pursuant to sub-section 7(2) of the Act".

An eligible person is defined in Section 2 of the Act as "a person who carries on activities that support commercial operations and, without limiting the generality of the foregoing, includes an economic, business, or technological institute or centre, a municipal corporation, or a municipal industrial development corporation".

The breadth of this mandate meant that IRDP would have to be broad in scope. Its target group could be defined either sectoral or regionally and its objectives could be economic, social, technological and/or entrepreneurial in nature. Further elaboration of the program's scope can be found in the IRDP regulations.

1.3.2 Rationale and Objectives of the IRDP

1.3.2.1 Rationale

The rationale for the IRDP is rooted in the internal and external environments within which ITC and DREE were merged to form DRIE in 1982.

At a fundamental level, the rationale for government support to the private sector is that private investment can serve government priorities when certain obstacles are removed. The Program Review Task Force (PRTF of DREE/ITC) cited the following common obstacles to regional industrial development:

i) Excessive Risk: Project, technical, market, or financial risk could involve investment.

ii) Lack of Awareness: Costly information acquisition to support business decisions could be excessively costly for firms.

iii) Rate of Return: Private rates of return might be insufficient to justify investment which would be warranted for their social benefit.

iv) Corporate Policy: Some corporate policies may not meet government objectives, requiring inducements to ensure that appropriate investments are made.

Another basic rationale for government support involves the mitigation of contemporary external influences. In the 1980's, for example, there has been an increase in international competition in trade. The effect of this has been a need to accelerate the processes of innovation and adaptation. In more remote regions, for example, the need to restructure a key industry or promote an alternative industry such as tourism may be the result of such external influences.

Another external influence on industrial and regional development is the assistance foreign governments provide in these respects. In the context of increasing global competition, this kind of assistance along with non-tariff barriers can have far reaching effects.

The Program Review Task Force

As part of the merger of ITC and DREE, the Program Review Task Force (PRTF) was set up in January, 1982 to make recommendations concerning what business the new department should be in, the clientele it should be serving, and the tools required for the job.

Based on an analysis of current government priorities and objectives, the PRTF conducted a review of ITC and DREE programs with a view to maintaining the most appropriate aspects of these under DRIE.

Concurrently, the PRTF addressed what it saw as a proliferation of programs for economic development. This situation ran counter to the concept of a comprehensive range of assistance to business because of an evident piecemeal approach which had negative impacts on coordination, ministerial accountability, transparency and delivery.

The result was the development of a hypothetical ideal program that served as a model for the IRDP in many respects. The aspects of the ideal program's approach, as summarized below, encapsulated the rationale for the IRDP:

- regional and sectoral development strategies would be harmonized and support would be geared to all aspects of the corporate development cycle;

- the prospects for success, the firm's own development plans, and a knowledge of why assistance is required would be a pre-requisite for action;

- cost and risks would be shared unless the interest was exclusively that of the Government;

- enriched support should be provided where a firm was disadvantaged by size or location; and

- comprehensive assistance would be provided at the local level with headquarters acting as a resource for all concerned.

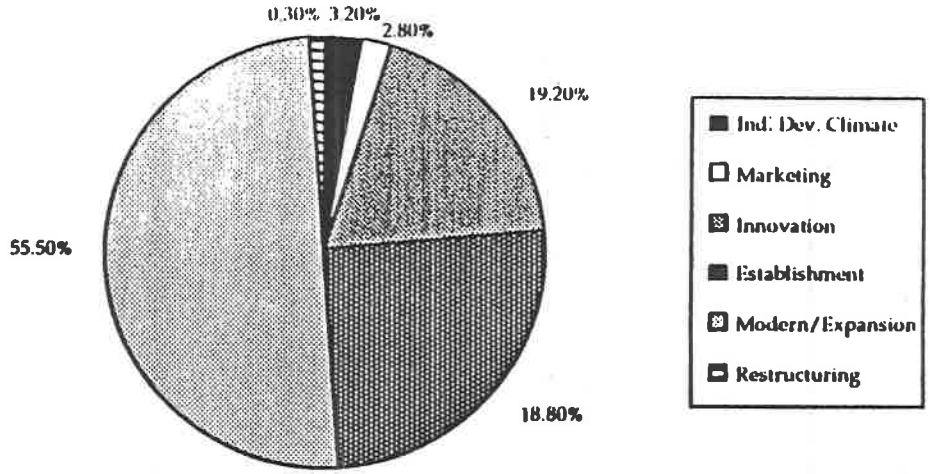
1.3.2.2 Objectives

The overall IRDP objective, as stated in the annual reports, is as follows:

"To assist eligible businesses to increase competitiveness and sustain growth in order to contribute to economic prosperity in all regions and reduce economic isparity across Canada."

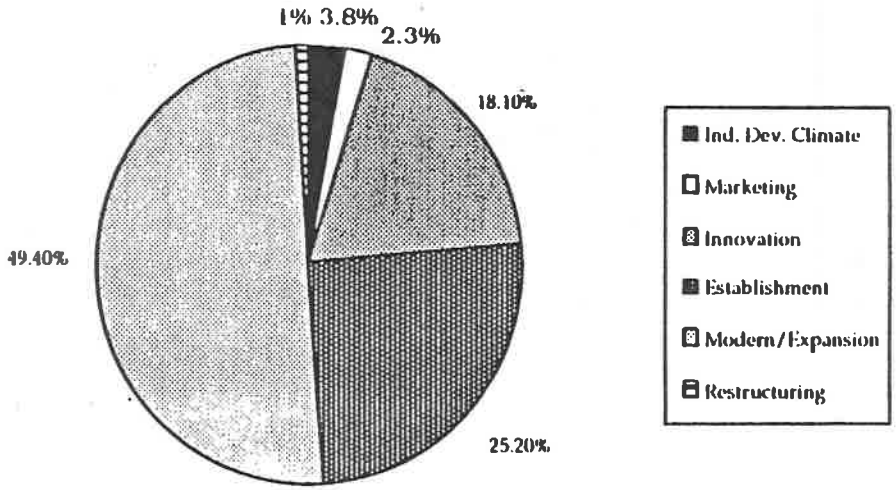
EXHIBIT 2

DISTRIBUTION OF PROJECTS
IRDP Program Elements (to March, 1988)



% Projects (n=4192)

DISTRIBUTION OF ASSISTANCE ($)
IRDP Program Elements (to March, 1988)



% Assistance ($)
Total assistance = $1,258,060,708

1.3.3 Industrial and Regional Development Program Description

1.3.3.1 Overview

The IRDP provided financial assistance to commercial operations and eligible persons toward facilitating investment at all stages of the corporate development cycle or in activities which supported commercial operations. Initially, this comprehensive assistance was provided under six program elements:

1. Industrial Development Climate;
2. Innovation;
3. Establishment (of a new facility);
4. Modernization and Expansion;
5. Marketing; and
6. Restructuring.

Exhibit 2, opposite, shows the percentage of assistance and projects offered under all these elements. It indicates that, to March, 1988, "Modernization & Expansion" and "Establishment" projects comprised the majority of assistance and projects. "Innovation" represented just under 20% of all IRDP activity. "Industrial Development Climate" and "Restructuring" were discontinued in 1984 which explains their low proportions of projects and assistance. "Marketing", which existed through the program's life, also comprised a small proportion of both projects and assistance.

The purposes of assistance provided under each program element are shown below:

ELEMENT	PURPOSE OF ASSISTANCE
Climate	Industrial Development Climate Funding to encourage development of infrastructure required for industrial growth.

Innovation	Financial assistance toward the cost of developing new/improved products/processes, conducting R&D for pollution abatement, demonstration and engineering projects, and consultant's studies.
Establishment	Assistance toward the costs of plant establishment; buildings, machinery / equipment related infrastructure and consultant's studies.
Modernization and Expansion	Assistance for capital costs toward improving productivity and production, as well as to encourage the adaptation of micro-electronics technology and for selected studies.
Marketing	Assistance toward providing market development information, events/conferences to attract tourists, consultant studies, and trade missions.
Restructuring	Assistance toward consultant studies regarding feasibility, market research, and venture capital search. Funding for acquisition, construction on conversion of machinery and buildings.

In the 1984-85 fiscal year, both the Industrial Development Climate and Restructuring elements were discontinued. In the former's case, it was stated that its objectives could be better met through federal-provincial agreements and, for the latter, there was a lack of use. During the same period, tourism projects became ineligible since they could better be handled under federal-provincial agreements given strong provincial interest in the area.

The main tools available under the IRDP were non-repayable contributions, and specifically or conditionally repayable contributions. The types and levels of assistance available varied from element to element. The amount of assistance offered was the estimated minimum necessary to meet the project requirements. Consideration was given to capacity utilization and impacts on other businesses. For all elements except Industrial Development Climate, the maximum level of assistance from all sources was limited to 90% of a project's costs.

Toward addressing the regional development objectives of the IRDP, the level of maximum possible assistance was skewed in favour of less developed areas. The method by which this was done involved classifying all census divisions into four tier groups:

- Tier I consisted of the most developed census divisions of the country where approximately 50 percent of the population lived;

- Tier II comprised census divisions that were next in line on the development scale and accounted for approximately 30 percent of the population;

- Tier III covered the relatively less developed areas and accounted for approximately 15 percent of the population; and

- Tier IV included the least developed areas in which no more than 5 percent of the population resided.

Tier group designations were made according to a "development index", which was a measure of economic disparity in the country based on income, unemployment and provincial fiscal capacity indicators in 260 of Canada's census divisions as provided by Statistics Canada. Details are provided in Part III of the Industrial and Regional Regulations (1980-81-82-83, c. 160).

Tier group designations were reviewed annually on July 1 for possible adjustment depending on changing economic conditions.

To address possible short-term economic downturns in a Tier I census district, the program provided for the equivalent of Tier II assistance for the Establishment and Modernization/Expansion elements when the average ratio of unemployment insurance beneficiaries to working-age population in the census district exceeded, by one percentage point, the national average for any consecutive six months. Applications were accepted for one year following designation of an area as Special Tier I. Note that, initially, Tier I special designation was based upon the ratio for each of six consecutive months. This was altered during the first year of the program to enhance its sensitivity to temporary economic downturns.

Throughout the life of the program, the majority of applications were received and assessed at the DRIE Regional offices. Larger projects required approval at the level of the Minister, Treasury Board, or Cabinet levels. Applications were reviewed against established criteria:

- o incrementality (Is government assistance required?) including:
  - applicant's ability to undertake the project
  - necessity of project to viability of applicant's business
  - riskiness and implication of failure to company resources
  - existence of prior commitment to project
- o commercial and economic viability;
- o significant economic benefits to Canada; and
- o value for money.

Once projects were approved, legal agreements were prepared which outlined the work to be undertaken, the total cost to be shared, and the timeframes. Provisions existed for monitoring project progress, the payment of claims, reimbursement of contributions, and the recovery of Crown contributions.

1.3.3.2 Population Served

The program was designed to meet the needs of two client groups.

1. Manufacturers, processors, and tourism operators could apply under Innovation, Establishment, Modernization/Expansion and Restructuring. Tourism could also apply under Marketing; and

EXHIBIT 3 - SUMMARY OF ELIGIBLE COSTS* UNDER THE IRDP

ELEMENT	CONSULTANT STUDIES	DEVELOPMENT ACTIVITIES	PRE-PRODUCTIION ACTIVITIES	MARKETING ACTIVITIES	OTHER
Industrial Development Climate (revoked 11/84)					• operating costs for studies, scholarships & courses • capital & operating costs of centres or institutions • capital costs & costs of related services for infrastructure development given provincial participation is satisfactory to the Minister
Innovation	• limited to supporting the costs of the consultants	• directly related labour, material, sub-contracts and consultants, industrial design services • costs of constructing prototypes, pilot plants, test equipment & services, & equipment rental exclusively for development purposes	• documentation, design, test, equipment, and other similar non-recurring pre-production activities • planning studies re: work flow • design of special production equipment • testing re: evaluation, verification & related laboratory work	• marketing directly related to defining specifications & assessing prospects for commercial exploitation	
Plant Establishment	• as above		• buildings • machinery & equipment • capitalized preproduction cost of insurance and interest during construction • directly related infrastructure excluding land • computers & software for use on the plant floor (CAM) or for computer-aided design of products manufactured in the plant (CAD) [Revised]	• assistance for market research studies	
Modernization and Expansion	• as above		• computer aided manufacturing or computer-aided design where (1) first use by the firm, (2) increases productivity, (3) significant advance in technology and (4) only part of expansion project costs • machines & equipment that improve productivity (for Modernization) • capital costs (for Expansion)	• assistance for market research activities	
Marketing	• as above	• (tourism) site specific infrastructure (revised 11/84)	• promotion costs, special event (until 11/84), & conference	• operational costs for special event/conferences on a "first & only" time basis • in-depth market research studies & market strategies studies	
Restructuring (revoked 11/84)	• as above		• assistance in acquisition of working capital • assistance in acquisition, construction or conversion of machinery, equipment and buildings	• assistance for market research studies	

2. Non-profit organizations conducting activities in support of commercial operations could apply under the Industrial Development Climate, Innovation, and Marketing.

After November, 1984, municipal corporations and other government owned or controlled enterprises were no longer eligible for assistance as this would be more appropriately provided through direct legislation in line with current objectives.

1.3.3.3 Supported Activities

In the context of the IRDP's overall objective to increase competitiveness, sustain growth, contribute to economic prosperity, and reduce regional economic disparity, the supported activities are necessarily of a wide variety in terms of both the object of the support and the region affected. In all cases the activities supported must have met the criteria of incrementality, viability, and benefit to Canada.

The Industrial and Regional Development Act & Regulations originally provided for assistance via four instruments; participation loans, grants, loan guarantees, and contributions.

Eligible Costs

The eligible costs under the IRDP are summarized in Exhibit 3, opposite. Related information regarding levels of assistance is provided in Section 1.4.5.

Level of Assistance

The following table provides the maximum contribution allowed as a percentage of eligible costs:

	Element	**	Maximum Contribution*** Tier I	Tier II	Tier III	Tier IV
1.	Industry Development		100%	100%	100%	100%
	Climate		N/A	N/A	N/A	N/A
2.	Innovation*	1				
		2	50.0%	60.0%	75.0%	75.0%
			33.3%	40.0%	50.0%	50.0%
3.	Establishment	1	Nil	35.0%	50.0%	60.0%
	Plant Establishment	2	Nil	17.5%	25.0%	30.0%
	Consultant Studies	1	50.0%	60.0%	75.0%	75.0%
		2	30.0%	30.0%	37.5%	37.5%
4.	M & E	1	50.0%	60.0%	75.0%	75.0%
	Consultant Studies	2	30.0%	30.0%	37.5%	37.5%
	Adaptation of Micro-	1	50.0%	60.0%	75.0%	75.0%
	Elect. Tech.	2	30.0%	30.0%	37.5%	37.5%
	Modernization	1	25.0%	35.0%	50.0%	50.0%
		2	17.5%	17.5%	25.0%	25.0%
	Expansion	1	25.0%	35.0%	50.0%	50.0%
		2	17.5%	17.5%	25.0%	25.0%
5.	Marketing	1	50.0%	60.0%	75.0%	75.0%
	Consultant Studies	2	25.0%	30.0%	37.5%	37.5%
	Tourism Projects	1	50.0%	60.0%	75.0%	75.0%
		2	N/A	N/A	N/A	N/A
	Promotion and	1	50.0%	60.0%	75.0%	75.0%
	Market Research	2	45.0%	45.0%	45.0%	45.0%
6.	Restructuring	1	50.0%	60.0%	75.0%	75.0%
		2	N/A	N/A	N/A	N/A

Notes:

* After April 1, 1986, all innovation projects with eligible costs of less than $100,000 were handled by regional offices of the NRC under the Industrial Research Assistance Program.

** Percentages in row "1" apply to the period before November, 1984, and those in row "2" to the remainder of the program's existence.

*** Effective November 9, 1984, projects with eligible costs of less than $100,000 normally received the maximum level of assistance.

N/A: No longer applicable after November, 1984.

Minimum Project Thresholds

Under certain elements of the IRDP, minimum project thresholds for eligible costs were established below which no assistance could be provided.
For the Industrial Development Climate, and Marketing elements, no thresholds were established. For Innovation, no thresholds existed until April, 1986 when one was set at $100,000.

Under the Establishment and Modernization and Expansion elements the following thresholds applied:

	Tier I	Tier II	Tier III	Tier IV
Establishment	Not eligible	$50,000	$25,000	$5,000
M&E (Before 11/84)	$100,000	$50,000	$25,000	$5,000
M&E (After 11/84)	$ 50,000	$50,000	$25,000	$5,000

1.3.4 Relationship to Other Programs

As discussed under Rationale, the IRDP was, in part, intended to incorporate many previous programs. Initially, therefore, only certain special purpose programs remained outside the IRDP:

- the Defence Industry Productivity Program (DIPP);
- the Small Businesses Loans Act (SBLA);
- the Canadian Industrial Renewal Board (CIRB) [until 31/3/86];
- Special Agricultural and Rural Development Act (SARDA); and
- the Native Economic Development Program.

Though these programs all had some commonality with the IRDP, they focused on specific client groups (i.e. native communities) or sectors (i.e., defence).

As the new Department and the IRDP developed, it was evident that additional needs had to be met outside the IRDP framework. This resulted in the initiation of several new programs and federal-provincial agreements:

1984-85:

- the Western Transportation Industrial Development Fund (WTIDF);

1985-86:

- federal-provincial sub-agreements under the Economic and Regional Development Agreement (ERDA);

1986-87:

- the Atlantic Enterprise Program (AEP) [until 1987-88];
- the Enterprise Cape Breton Program (ECBP) [until 1987-88]; and

1987-88:

- Technology Outreach Program (TOP);
- Technology Opportunities Europe Program (TOEP); and
- Microelectronic & Systems Development Program (MSDP).

1988-89

- FEDNOR;
- Enterprise Development Program (EDP)(new program in FY '88-'89 in Quebec only); and
- Manufacturing Productivity Improvement Program (MPIP) Québec only.

In addition to these new programs, certain projects were devolved to other programs related to all or some of the program elements of the IRDP:

- innovation projects with eligible costs of less than $100,000 were devolved to the Industrial Research Assistance Program of the National Research Council as of April 1, 1986; and

- as of June 6, 1987, all projects with eligible costs of $20 million or less in the Atlantic Provinces were devolved to the Atlantic Canada Opportunities Agency (ACOA). In the Western provinces, these projects were devolved to the Western Diversification Office as of August 3, 1987.

Outside DRIE there were other related programs operated by other federal departments or at the provincial level. Taken together, these and DRIE's own related programs comprise an important part of the public sector support environment for private enterprise and regional economic development.

1.3.5 Program Delivery

The Program Review Task Force (1981) recommended that comprehensive assistance be provided at the local level with headquarters acting as a resource for all concerned. Accordingly, decision making on projects was, to varying degrees over time, decentralized with a majority of cases being assessed at the regional offices. At the outset, the signing authorities for the IRDP were as follows:

	Minister	Deputy Minister	Assoc. Deputy Minister	ADM RXD	Dir. Gen.
Acceptance of an application in the form of a letter	X	X	X	X	X
Sectoral/Regional sign-off					
Up to $500,000 Crown support	X	X	X	X	X
Over $500,000 Crown support	X	X	X	X	
Authorization of offer[1]					
Climate element	X				
Accommodation, dining & special events	X	X	X		
Sensitive relocation cases	X				
Non-sensitive relocation cases					
All other contributions					
- up to $100,000	X	X	X	X	
- over $100,000	X				
Participation loans	X				
Loan guarantees[2]	X				

1. Over $10 million required Treasury Board approval; over $20 million required CCERD approval.
2. As above, plus concurrence of Minister of Finance.

EXHIBIT 4
SUMMARY OF IRDP FINANCIAL AUTHORITIES

Date	Description
July 1983	T.B. Approval: RXDs approve up to $500K Minister veto above $100K
July 1983-June 1987	Actual Practice: RXDs could reject up to 550K Minister review $100K to $500K (5 days to exercise veto but actually RXDs would send out offers only after Ministerial approval). This meant de facto Ministerial approval for all projects above $100K
June 1987	RXDs given authority to approve offers up to $250K. RXDs rejection level up to $500K.
August 1987-July 1988	All commitment authority below DM withdrawn from staff.
June 1988	Official RXD approval and rejection lowered to $100K

Source: Consultations with Program Management

One factor determining the degree of decentralization was the amount of delegated authority to approve offers of assistance given to DRIE Regional Officers. During the life of the program the amounts which the Regions could authorize changed over time. A summary of this is provided in Exhibit 4, opposite.

At the outset, Treasury Board approval of the program included authority for the Regional Executive Directors (RXDs) to approve offers up to $500,000, while reserving to the Minister the right to veto offers over $100,000.

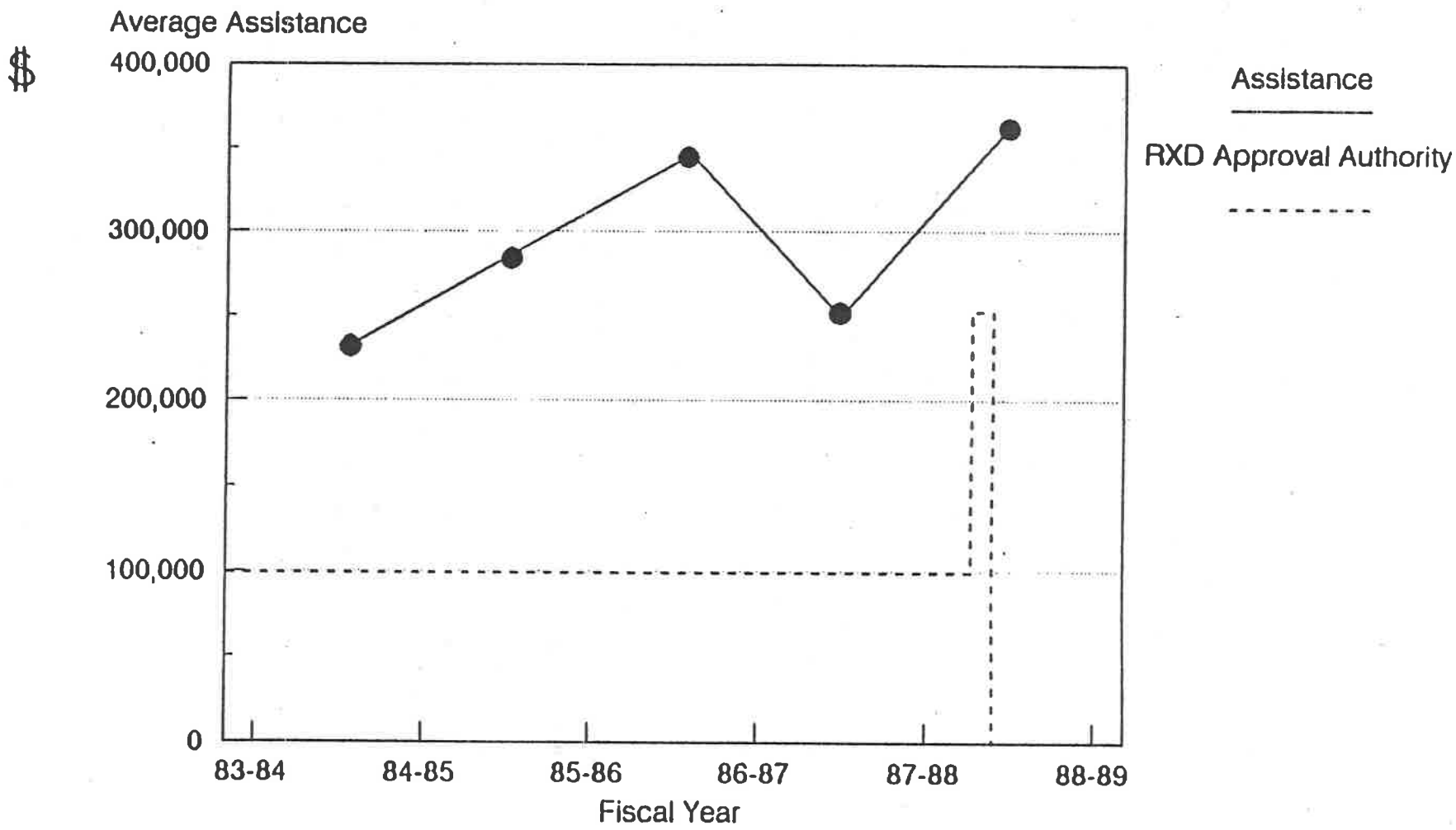
The procedures established differed from what was originally authorized by Treasury Board. RXDs were permitted to reject up to the $500,000 potential contribution level but the Minister reviewed all approvals from $100,000 to $500,000 and had five days to exercise his veto. The effect of this system was that RXDs would send out offers only after the Minister's Office had cleared the project, regardless of the length of time. In effect, the Minister was approving all offers above $100,000.

In June, 1987, the RXDs were given authority to approve up to $250,000 in potential contributions. Also, Directors-General and Directors were given some limited authority up to the $100,000 assistance level. The RXD rejection level remained at $500,000.

The final change occurred on June 13, 1988 when the level of delegated authority for both approval and rejection were reduced to $100,000. It should be noted that, between August 1987 and July 14, 1988, all commitment authority below the Deputy Minister was withdrawn from staff. No projects were actually authorized under the established delegation of authority during that period.

Ministerial review was required for any cases involving relocation which were deemed politically sensitive as well as assistance provided for the purposes of special events, dining and accommodation.

EXHIBIT 5
AVERAGE LEVELS OF ASSISTANCE VERSUS RXD OFFER APPROVAL LEVEL OVER THE LIFE OF THE IRDP



With respect to the number of projects handled exclusively at the regional level, the impact of the authorities to approve over $100,000 in contributions would have resulted in them handling a large majority of applications:

*Estimated Amount of Assistance	% of Number of Offers Accepted	% of Authorized Assistance
< $100,000	66%	10%
$100,000 to $249,999	16%	9%
$250,000 to $499,999	8%	10%
$500,000 to $999,999	4%	11%
$1,000,000 and more	6%	60%

* Data to March 31, 1988

The data also shows that the 66% of accepted offers with estimated levels of assistance of less than $100,000 more comprised just 10% of total authorized assistance over the period. Moreover, the average amount of assistance per offer was, for three of five fiscal years, above the $250,000 level as illustrated in Exhibit 5, opposite.

From these perspectives the level of delegation seems more modest.

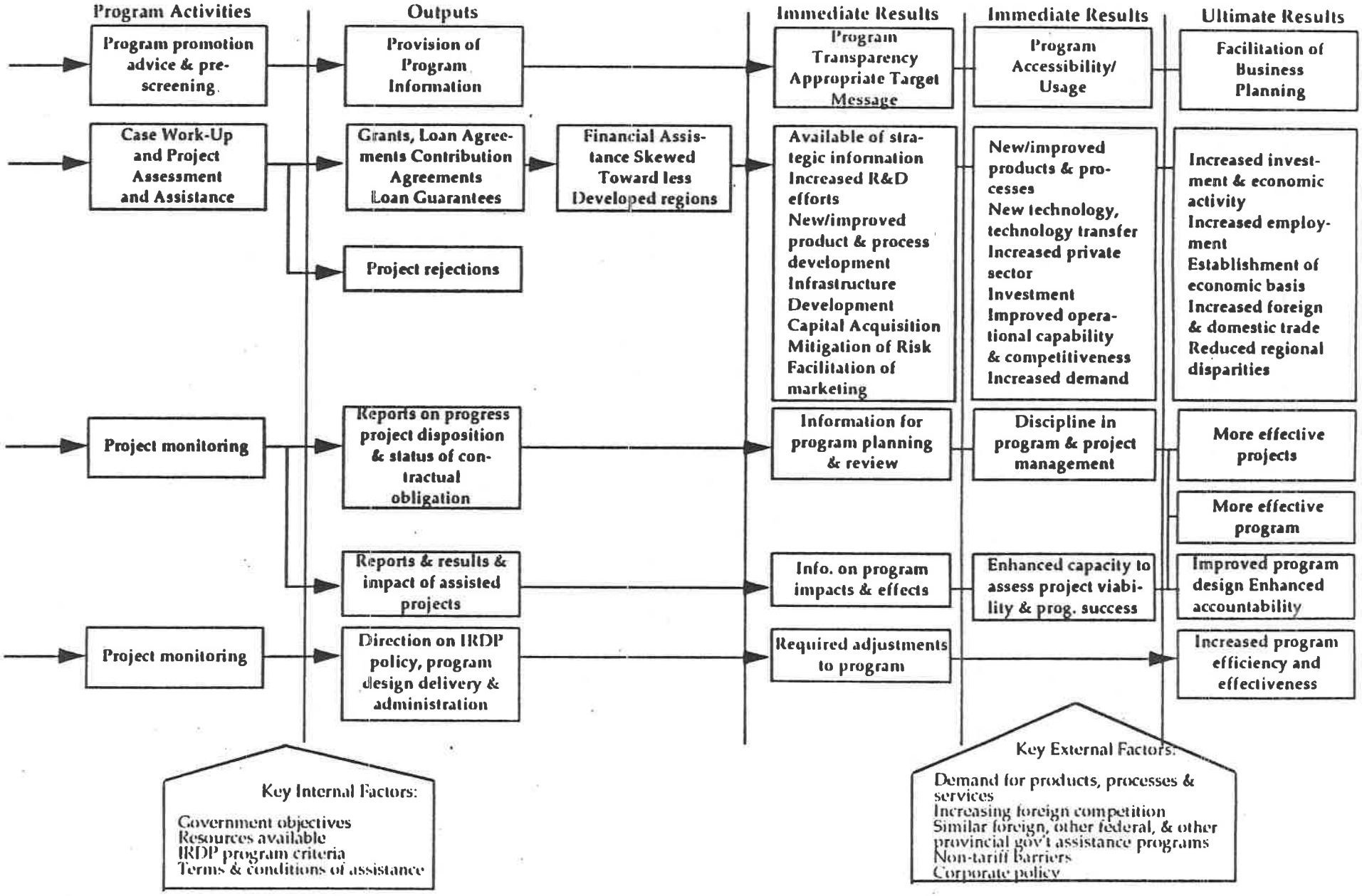
1.3.6 Impacts and Effects

The IRDP was a complex program, broad in scope, and with several objectives. It is important, therefore, to attempt to provide an overall perspective of the program with respect to its objectives, outputs, impacts and effects.

EXHIBIT 6 - IRDP LOGIC MODEL

Resource Input: $1,258,060,708 in total authorized assistance to March 31, 1989

Objective: To assist eligible businesses to increase competitiveness and sustain growth in order to contribute to economic prosperity in all regions and reduce economic disparity across Canada (Refer: Section 1.3.2)



Impacts and effects of the IRDP are illustrated in Exhibit 6, opposite, as they relate to program activities (discussed in Section 1.3.6) and outputs. The classification of impacts and effects into immediate, intermediate and ultimate reflects the notion that the effects that are the direct outcome of a program activity, in turn, have additional effects in the broader context of the market economy. Reductions in regional disparities and increased employment, for example, are both seen as a result of the immediate economic activity generated, in whole or in part, by program activities.

The IRDP, like any program, was influenced to varying degrees by factors both internal and external to the government. These factors are incorporated into Exhibit 6 where internal factors such as resources are indicated as influencing the program activities and outputs while external factors such as foreign competition influence the program's impacts and effects.

In evaluating objectives, outputs, impacts and effects, it is also important to place each in a historical context. As indicated in Section 1.3.3 and 1.3.5, the IRDP underwent several important modifications. In addition, Section 1.3.4 provides examples of several programs which were related to the IRDP or that partly replaced it. In view of this, the illustration in Exhibits 6 must be recognized as a static model of a dynamic situation and not viewed in isolation.

The impacts and effects exhibited in the logic model are those which were intended. Allowance must also be made for possible negative, unintended impacts and effects. These would have stemmed from unforeseen circumstances wherein the program criteria were not met or where insufficient assistance was provided. Examples may include project failures due to misguided internal adjustments, insufficient funding, projects which resulted in no net benefit (where resources were simply shifted), and projects which had a negative impact upon existing firms.

2.0 EVALUATION DESIGN

2.1 Evaluation Issues

The new Industry Science and Technology Canada (ISTC) will take on a role oriented to using science and technology as a means to economic success. Specifically, the new Department will act in partnership with the private sector, the science community, other federal government departments, and other levels of government to:

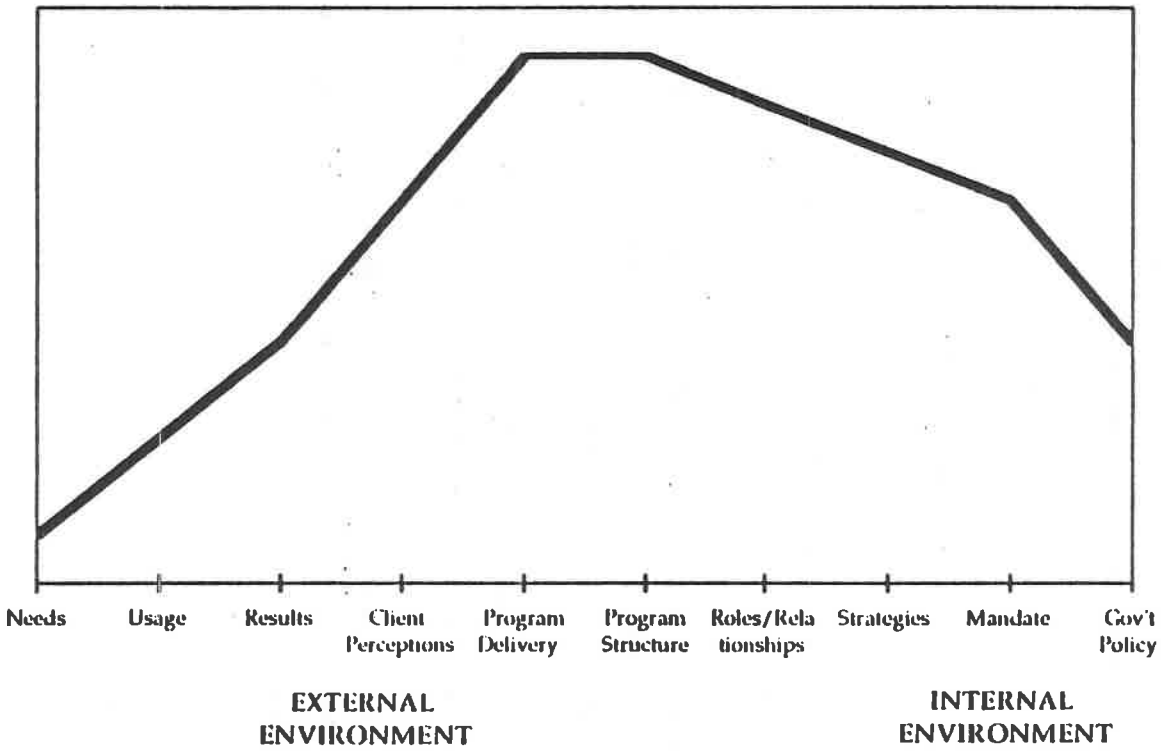
- promote international competitiveness and industrial excellence in Canada;
- renew and expand our scientific, technological, managerial, and production base; and
- bring together the talents of Canadians to guarantee our place in the first rank of industrial and commercial nations in the twenty-first century.

While consultation, information management, brokerage and policy functions will be more heavily emphasized than in the past, the new Department will still provide funded assistance programs in certain industrial policy areas.

Senior management has therefore requested a study of IRDP to provide a retrospective analysis of the "lessons learned" for future funded assistance programming.

An internal Departmental Steering Committee and the Departmental Audit and Evaluation Committee (DAEC) have explored, reviewed, and refined the study issues, scope, and approach for this study.

EXHIBIT 7
THE IRDP ISSUES SPECTRUM AND MANAGEMENT CONTROL



The above chart illustrates the degree of influence which DRIE management exerted over different aspects of the IRDP environment. The findings for this study focus on the middle of the continuum, while taking into account all aspects of the IRDP environment.

In concurrence with the interests of DAEC, the Steering Committee decided that the overriding theme for the IRDP evaluation should be lessons learned from the program to be used in the design and delivery of future ISTC programs. The program elements of innovation, establishment, modernization/expansion, and marketing were all considered important. With this general theme in mind the following "issue clusters" emerged:

i) The usage of IRDP in terms of clients, regional program take-up and the appropriateness of take-up vis-a-vis program objectives;

ii) The adequacy of IRDP support in terms of selection criteria, eligible costs, the financial assistance offered (by tier group), and the attribution of assistance to project results;

iii) The program design and delivery mechanisms in terms of promotion, the application process, type and level of assistance (e.g. tier system and repayable vs. non-repayable contributions) and the effectiveness of the program/project management framework;

iv) The results of IRDP in terms of contribution to project success, reduction in regional disparities, and the effects of other programs on IRDP outcomes; and

v) Program/instrument comparison and alternatives in terms of a comparison of IRDP with similar programs and alternatives in terms of mandate/objectives, clients, design, and delivery process.

Exhibit 7, opposite, shows that the study issues focus on lessons learned within the primary domain of DRIE management control, while taking into account all aspects of the DRIE policy environment.

EXHIBIT 8
SAMPLE DISPOSITION

	Recipients		Rejected Applicants		Comparison Group	
	N	%	N	%	N	%
Not reached	249	20	54	13	158	35
No telephone #	68	5	56	14	--	--
Not in service	127	10	47	12	6	1
Wrong #	111	9	53	13	7	2
Qualified respondent no longer at the Company	122	10	60	15	--	--
Company no longer in existence/ new ownership	12	1	2	1	--	--
Refusals	37	3	11	3	9	2
Duplicate #s	61	5	--	--	38	8
Language problem	3	4	--	--	--	--
Terminated partway	3	4	--	--	--	--
Did not receive IRDP	84	7	--	--	--	--
Did not apply	--	--	7	2	--	--
Never heard of IRDP	--	--	--	--	83	18
Received IRDP	--	--	6	1	--	--
Applied for IRDP	--	--	--	--	54	12
Withdrawal	--	--	2	1	--	--
Completed	372	30	100	25	101	22
TOTAL CONTACTS	1,249	100	398	100	456	100

2.2 Methodology

A very rigorous methodology was implemented in the course of this study. A total of nine different sources of data were used to help reach the conclusions described in later sections of this report. Sources of data included:

- a literature review to provide an overall view of what has been done in the past, what other similar programs have done, and so on;
- interviews with project officers and program managers to get their views of the program;
- interviews with experts in the field of industrial and regional development;
- case studies;
- an analysis on data of the PRISM data base;
- a thorough review of a sample of project summaries;
- interviews with recipients of IRDP assistance;
- interviews with rejected applicants; and
- interviews with a comparison group of companies who had never applied for IRDP but who were aware of the program.

EXHIBIT 8
SAMPLE DISPOSITION

	Recipients		Rejected Applicants		Comparison Group	
	N	%	N	%	N	%
Not reached	249	20	54	13	158	35
No telephone #	68	5	56	14	--	--
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Withdrawal	--	--	2	1	--	--
Completed	372	30	100	25	101	22
TOTAL CONTACTS	1,249	100	398	100	456	100

The first four sources described provided qualitative type of information, whereas the last five were more quantitative in nature. Data for the last three was gathered by undertaking a telephone survey. Exhibit 8, opposite, provides a summary of the result of the attempts made to contact companies for each group. The following are noteworthy:

- a 2% or 3% refusal rate is extremely low hence giving more credibility to the results of the survey. That is, non-response bias should be extremely low;

- a 22% to 30% completion rate is well within industry standards (if not above);

Summaries of completed interviews

In total, 634 individuals were interviewed in the course of this evaluation study. Since it was originally planned that 610 interviews would be completed, goals were well exceeded. These interviews are broken down as follows:

Group	Planned	Actual
Project officers and Program managers	30	37
Experts[1]	10	3
Case Studies	20	21
Recipients	350	372
Rejected applicants	100	100
Comparison group	100	101
Expert Group	-	3
Total	610	637

1 The regions provided us with a list of experts they recommended we interview. Most of these were program staff and were therefore included in the officer/manager group.

Interviews with Project Officers and Program Managers

A total of 37 of these interviews in all regions of the country were conducted in person except in the Atlantic where these were completed by telephone. These interviews were meant to be qualitative in nature, providing a flavour of the opinions and experiences of program staff. These were sampled from a list of staff still employed by ISTC, ACOA or WD.

Interviews with Experts

Expert interviews were also meant to be qualitative in nature. These were selected by regional representatives for their reputation in the area of funded assistance for industrial and regional development. After three interviews with extenral experts it became clear that their knowldedge of IRDP was not sufficiently detailed to allow for meaningful design and delivery comments. For this reason, addtional IRDP officer representatives and an expert panel of former Regional Executive Directors were added to our consultations.

Case Studies

In the course of the case studies, project files were reviewed, officers were interviewed and company representatives were interviewed. This provided an overall picture of the steps followed in each case. These were meant to be qualitative in nature.

PRISM Database

The PRISM database provided useful information on the profile of recipients of IRDP assistance. A number of selected variables for all recipients of assistance within the four program elements pertinent to the evaluation (i.e marketing, innovation, establishment, modernization and expansion) and within the years relevant to the evaluation (i.e. between 1983 and 1988) were copied onto a computer diskette for more thorough analysis. In total 1,708 cases were included in this database.

Project Summaries

Originally, it was planned that project summaries would be obtained for each completed recipient survey. However, some summaries were unavailable and therefore only 297 were obtained instead of 372. A sample this size based on a total population of 1,708 is reliable to within plus or minus 5.2 percent, 19 times out of 20. This is well within acceptable statistical standards.

Recipient Survey

The population for the survey of recipients was defined as all recipients of IRDP assistance between 1983 to the end of the 1987-88 fiscal year who had received assistance for one of the still active four program elements (i.e. innovation, establishment, modernization and expansion, and marketing). Therefore those organizations who received assistance for industrial development climate or for restructuring, both eliminated in 1984/85, were not included in the survey population.

A stratified disproportionate random sampling methodology was followed. That is, the population was stratified by program element, sampling from one element to the next was disproportionate to ensure a minimum cell size, and within each element sampling was random. All sampled recipients were mailed a letter explaining the evaluation, the survey, and the information requirements.

A structured survey instrument was designed. The final draft of this questionnaire was pretested with 5 recipients in actual field conditions. The revised version was translated into French. The questionnaire and the survey methodology were reviewed and approved by Statistic Canada.

A copy of these questionnaires is included as Annex A.

In total 372 interviews were completed with recipients. Such a sample size, based on a universe of 1,708 is reliable to within plus or minus 4.5 percent, 19 times out of 20. This is also well within acceptable norms.

EXHIBIT 9
SAMPLE REPRESENTATIVENESS - RECIPIENTS -

Characteristics	Actual (%)	Sample (%)
Region		
Atlantic	18	33
Quebec	44	14
Ontario	21	27
Prairies	10	19
B.C.	7	7
SIC		
10, Food	12.3	14.2
11, Beverages	1.2	1.8
12, Tobacco	0.1	0.3
15, Rubber Prods.	0.7	0.6
16, Plastics	4.9	3.6
17,Leather&Allied	0.3	--
18, Prim. Textile	0.2	--
19, Textile Prods.	0.3	0.6
24, Clothing	0.3	--
25, Wood Inds.	12.0	11.8
26, Furniture	4.3	4.5
27, Paper&allied	1.4	0.6
28, Print'g,Pub'g.	1.6	3.3
29, Prim. Metals	2.5	4.2
30, Fab. Metal Pr.	13.5	12.9
31, Machinery	11.8	13.0
32, Transp. Equip.	7.1	5.7
33, Elect'l,Electric	11.1	6.9
35, Non-Met. Min.	3.6	4.5
36, Refined Petrol.	0.1	--
37, Chemical	3.9	3.9
39, Other Mfg.	6.7	7.6
Tier		
1	30	33
2	26	25
3	27	27
4	17	15
Element		
Marketing	6	7
Innovation	22	23
Establishment	22	17
Expansion	51	53

As shown in Exhibit 9, opposite, except at the regional level, our sample is very representative of the total population. Interviewing was conducted during the month of October on weekdays, between 9 AM and 5 PM. Some attempts were made on a few nights to try to complete interviews with respondents whose home phone number had been registered. Bilingual interviewers were available.

Completed interviews were coded, keypunched and analyzed using Statistical Package for the Social Science (SPSS). Rigorous data checks were made and only once it was felt that the data was clean did the consulting team proceed to a more thorough analysis of the data. Univariate, bivariate and multivariate statistical techniques were used in the course of the analysis of the data.

Survey of Rejected Applicants

The population for the survey of rejected applicants was defined as all applicants between 1983 and the end of the 1987-88 fiscal year who had been denied assistance or who had withdrew their application. Withdrawals were included because it was uncovered that, in some regions, when it was felt that the application would be rejected, the project officer would encourage the company to withdraw its application. This therefore reduced the proportion of rejects in that region but increased the proportion of withdrawals.

A random sampling methodology was utilized. All sampled applicants were sent a letter explaining the study to increase cooperation.

A structured survey instrument was designed and pretested (n = 5) in actual field conditions. Statistics Canada approval was obtained for the questionnaire and for the methodology. The instrument was translated into French. A copy of both the English and the French questionnaire is included as Annex A.

In total 100 interviews were completed with rejected applicants. This provides results which are accurate to within plus or minus 9.8 percent, 19 times out of 20.

Other methodological steps for this survey were similar to those of recipients.

Survey of Comparison Group

The population for the comparison groups was defined as those companies registered in the BOSS directories.

The sampling methodology used was as follows:

- the larger manufacturing industry groups were separated, and all were listed;
- the smaller industry sectors were grouped and a random sampling was undertaken.

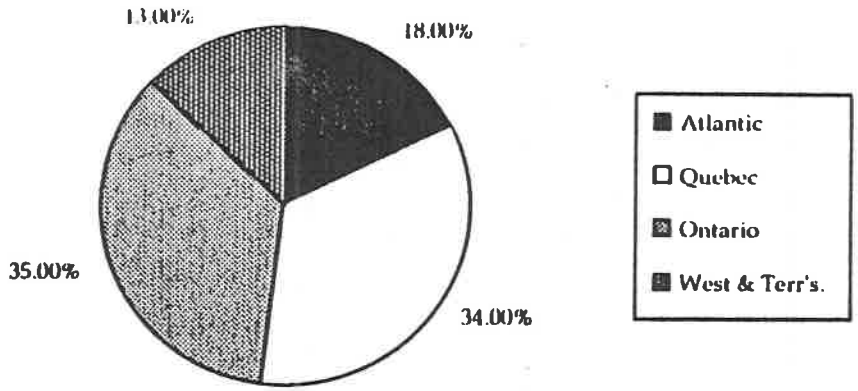
One of the weaknesses of using BOSS was that firms could be listed several times under different industry sectors. Therefore, even though it was originally planned that our final sample would be based on SIC's, it was not felt that the SIC provided in BOSS would be accurate.

All other methodological steps followed those detailed in the recipient survey section.

In total 101 interviews were completed. This provides us with a 95% confidence interval and a 9.8% allowable error.

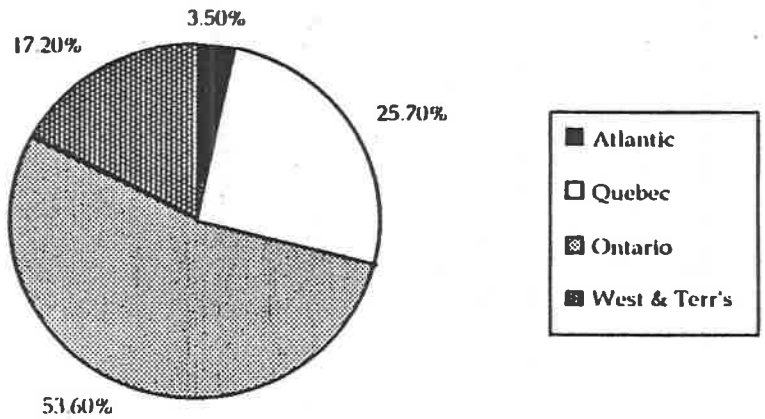
EXHIBIT 10

PERCENT DOLLAR VALUE OF OFFERS ACCEPTED BY REGION



% $ to Sept 1986

PERCENT VALUE ADDED BY MANUFACTURING BY REGION



% Value Added (1985)

Note*: textile industries are underrepresented due to their inclusion in the Candian Industrial Renewal Board (CIRB) Program

3.0 PROGRAM USAGE

3.1 Patterns and Levels of Usage

Question:

What were the patterns and levels of usage?

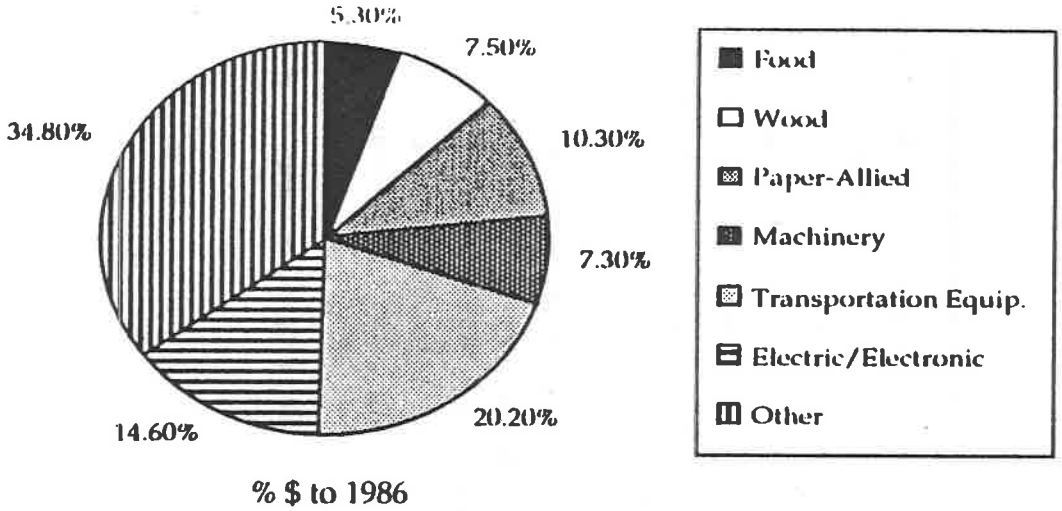
Observation:

The population served, from a regional perspective, can be described by relating the dollar value of offers accepted (cumulative to 9/86) to the value added in manufacturing between regions. Exhibit 10, opposite, shows that both the Atlantic and Quebec regions received significantly more assistance relative to their value added while Ontario received less. This may indicate that the regional skewing of assistance did, in fact, favour less developed areas, when compared to the relative industrial strength of the region. However, other factors such as differences in the number of staff serving a particular area or differences in program awareness may also explain this skewed effect.

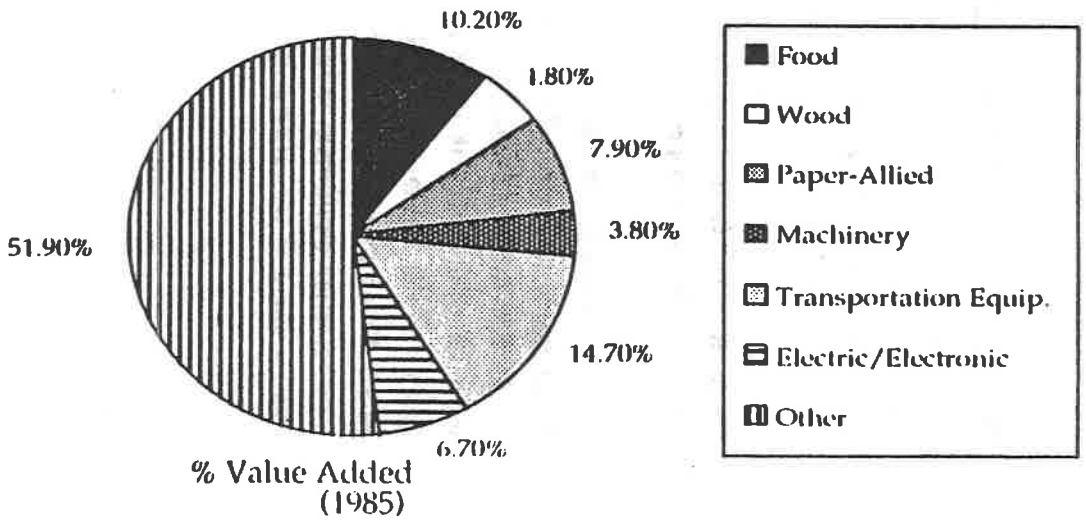
A similar comparison was also made for the major industry groups, as shown in Exhibit 11, opposite next page. The major industry groups named on these charts are those which received significant amounts of assistance (cumulative to 9/86) under the IRDP. These sectors accounted for 48.1% of total manufacturing value added in 1985 but received 65.2% of total assistance to 1986 (the most recent year for which data was available to date). These charts show that the electronics, machinery, and, to a lesser extent, transportation equipment industries, were favoured by the program as compared to their relative share of manufacturing value-added.

EXHIBIT 11

PERCENT DOLLAR OFFERS ACCEPTED BY MAJOR MANUFACTURING INDUSTRY GROUP



PERCENT VALUE ADDED BY MAJOR MANUFACTURING INDUSTRY GROUP



Note*: textile industries are underrepresented due to their inclusion in the Candian Industrial Renewal Board (CIRB) Program

EXHIBIT 12
COMPARATIVE FINANCIAL POSITION OF IRDP FIRMS VS EDP FIRMS AND GENERAL MANUFACTURING POPULATION

i) Liquidity (cash position)

Current Ratio : Current Assets/Current Liabilities

D&B Survey (1983)	=	1.6	n	=	38,301
Stats Can Corporate Statistics	=	1.6	n	=	41,771 (84) 42,691 (85) 43,161 (85)
IRDP Firms	=	1.7	n	=	55

ii) Turnover of Capital

Sales to Total Assets

D&B Survey	=	.74 - 1.67 (range for all manufacturing 1978) n = 27,473			
EDP Firms	=	2.17	n	=	898
IRDP Firms	=	2.01	n	=	172

iii) Sales to Employees

Average sales to employee for EDP were approximately $36,000 compared to $91,000 for the D&B population over the same period (1977 to 1982). The EDP figure represents 39% of the figure for the whole population.

For IRDP, the figure is $87,000 compared to a Stats Can (1985) figure of $190,000. This represents 46% of the figure for the full population.

Findings:

3.1.1 IRDP was used most extensively, relative to the manufacturing population, in the Maritime Provinces and in the Territories. The two regions with the highest relative usage, or penetration, were PEI and the territories. These were regions with relatively few companies per IRDP delivery officer.

3.1.2 Project penetration calculations revealed a high level of penetration into the Machinery sector. This level was second only to the Electrical/Electronic Products Industry.

3.1.3 Both Assistance Penetration and Project Penetration analysis reveals little penetration into the Clothing Industry and related industries such as Textiles, Primary Textiles, and leather. This can be explained by the existence of the Canadian Industrial Renewal Board which assisted firms in these sectors over the time in which IRDP existed.

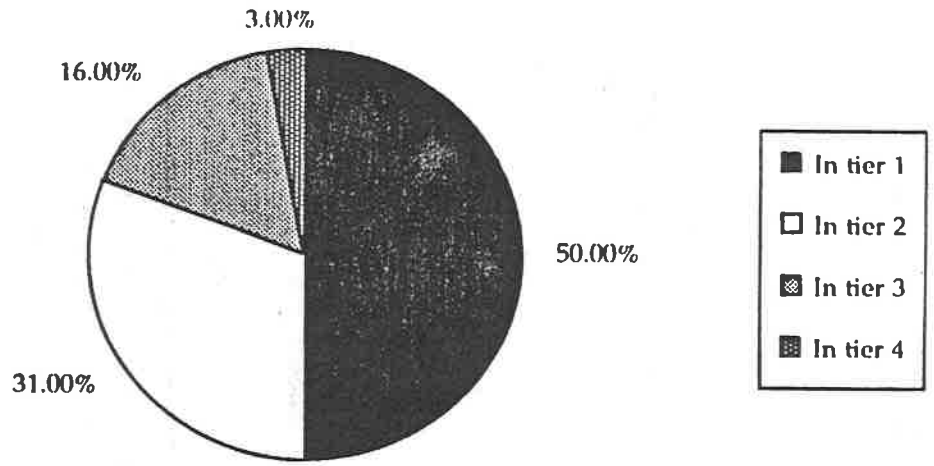
3.1.4 Usage of IRDP varied more by region than by industry type. When all IRDP projects are compared to the number of Canadian manufacturers in 1986, the "penetration" of users into the industrial population ranges from 67% in PEI to 4% in Ontario. On the other hand, the "penetration" rate is significantly less variable among industrial sectors ranging from just over 21% in electrical/electronics products to less than 0.5% in (24).

3.1.5 IRDP's high regional variations contrast with its predecessor EDP which tended to vary more by sector than by province. When only IRDP-Innovation projects are considered, however, the relative penetration of projects is more evenly distributed provincially and tends to show a similar pattern to EDP.

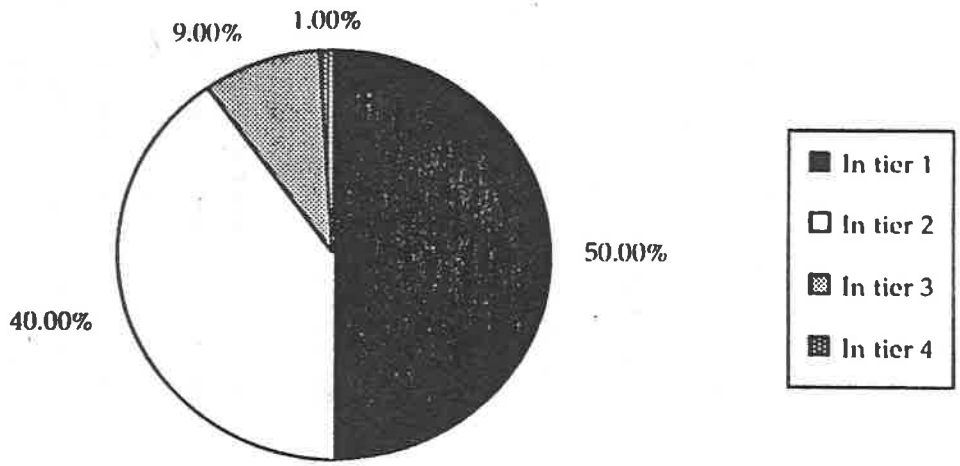
3.1.6 The overall IRDP distribution shows a similar regional penetration rate to the Regional Development Incentives Program, the forerunner of IRDP capital assistance programming. Like RDIA, IRDP shows highest penetration rates in the Maritime followed by Quebec, the West, and Ontario.

EXHIBIT 13

DISTRIBUTION OF IRDP INNOVATION PROJECTS IN EACH TIER 83-86



DISTRIBUTION OF FUNDING IN EACH TIER



... Innovation Projects remained concentrated in the most highly competitive regions.

Source: IRDP-Innovation Program Usage Analysis 1987

3.1.7 Our analysis of firm size shows that IRDP assisted companies tended to be small firms. 74% of the firms assisted by IRDP had fewer than 50 employees compared to 90% of the population of Canadian manufacturers which have fewer than 50 employees. The median number of employees for the firms in our sample which were assisted by IRDP was 15 (mean = 78), This compares to a median firm size of EDP-assisted firms which was 25 employees (mean = 40) (Variance by element).

3.1.8 Our analysis of IRDP firms (refer to Exhibit 12, opposite), show their cash position to be consistent with both EDP firms and manufacturing firms in general. IRDP firm's turnover of capital is consistent with or slightly lower than EDP firms. Both IRDP and EDP firms appear worse off in this regard than the industry as a whole, indicating they are employing their assets less efficiently.

3.1.9 The median sales/employees ratio for IRDP-assisted firms was, as noted opposite, markedly lower than that for the populations and slightly above that for EDP firms.

3.1.10 Innovation projects were most frequently used in tier 1 regions, and progressively less used in other tiers (refer to Exhibit 13, opposite next page).

3.1.11 Marketing element projects, despite remaining eligible for IRDP assistance for the life of the IRDP program, were not numerous and were *de facto* dropped by some regions early in the life of the program. This applies to the market feasibility subelement of innovation assistance as well as to the marketing element of IRDP innovation "We only funded feasibility studies when we didn't want to support the (product development) project. (see Sec. 4.1)

Conclusion:

IRDP usage reflected the stated desire of the Program Review Task Force to provide enriched support to firms disadvantaged by location (see Sec. 1.3.2). Program take-up resembled a combination of two previous programs from DRIE's amalgamated former Departments. In meeting this objective the program resembled the Regional Development Incentives Act (RDIA) in terms of its distribution of modernization/expansion and establishment assistance, while it resembled the Enterprise Development Program (EDP) in terms of its distribution of innovation assistance. Market feasibility studies, without a distinct program father, was not widely used.

3.2 Acceptability of Patterns and Levels of Usage

Question:

Were the patterns and levels of usage acceptable vis-à-vis program objectives?

Observation:

The pattern and level of IRDP usage was close to its potential given the experience of predecessor programs, the level of promotion, and the delivery processes of the program.

Findings:

3.2.1 The estimated "penetration rate" of IRDP into the population of Canadian manufacturing establishments was about 6-7%.

3.2.2 Forty-three percent of comparison group respondents felt they had a project which could have been eligible for assistance. About half of this group felt that IRDP funding would have had a positive effect. When this proportion is taken as a proxy for potential applicants, this indicates that the total potential usage for IRDP would have been about 8,000 establishments. The percentage of successful applicants, after withdrawals, rejections, non-starts, etc. was about one-third. Therefore it could be reasonably argued that less than 3,000 establishments were truly eligible for assistance under IRDP rules and practices.

3.2.3 From our file review it is estimated that 6,000-8,000 establishments applied for assistance under IRDP (the number cannot be precisely stated due to duplicates, mergers, splits, name changes, and differences in handling the application processes). From this group we found that over 2,000 received assistance approval (25-44%).

3.2.4 An analysis of IRDP-Innovation vs. Enterprise Development Program (EDP) usage showed that over a five year time period EDP assisted over 700 establishments and IRDP assisted over 600 establishments. (Exact estimates cannot be made due to duplicates, mergers, splits, name changes etc.) This works-out to a very similar penetration rate for the two programs.

Conclusion:

Our review of data indicates that, given IRDP's rules and regulations and its somewhat passive approach to program promotion, the program take-up rate was appropriate. This does not imply that the program was appropriately promoted, but rather that given existing industrial perceptions of the IRDP program, and given its application process, the program assisted about as many firms as could be expected.

4.0 ADEQUACY OF SUPPORT

4.1 Flexibility and Comprehensiveness of Activities and Costs

Question:

Was there sufficient flexibility and comprehensiveness in the type of activities and costs eligible for support in order to meet end users' needs and related program objectives?

Observation:

Market feasibility studies were not supported as frequently as may have been warranted. There was generally adequate flexibility and comprehensiveness in IRDP assistance. Problems sometimes arose regarding payment of contributions after costs had been incurred, causing cash flow problems for small companies.

Findings:

4.1.1 Almost 92% of respondents stated that they were either satisfied (59.5%) or very satisfied (32.4%) with the financial support received from IRDP. Eighty-six percent of recipients were satisfied or very satisfied with the eligible costs of IRDP. On the other hand, a number of recipients expressed frustration in not knowing what level of assistance they would receive during the application process and/or having the amount changed over time (see also Program Design and Delivery, Chapter 5.0).

4.1.2 Many project officers interviewed felt that assistance amounts and eligible costs were generally reasonable for IRDP, however, at the low-end, amounts of assistance offered, (particularly for Tier 1) were considered too low by many to be effective in inducing any appreciable change in client behaviour (i.e. many grants were too low to be incremental).

4.1.3 Some of the recipients and rejected applicants comments regarding assistance levels included the following:

"The stipulation that funding cannot be released until assets are paid for and in place ... creates a catch 22 situation whereby other institutions require the government funding to be disbursed before they release funds."

"We had to bridge finance our contribution with a bank loan. This was unusual and caused hardship, but luckily we have an unusually good working relationship with our bankers."

4.1.4 Case studies revealed that, for innovation cases, IRDP may have been somewhat inflexible in terms of its structuring of what could be funded by a given project. Aside from the tier 1 limitations, project officers were reluctant to fund the market research/feasibility study phase of innovation, even though feasibility studies were technically eligible under the program. As one project officer stated: "We didn't fund people to do their homework, they should have that done before they come to see us." Another officer expressed the view that if DRIE had promoted feasibility studies, there would have been an insatiable demand for them.

On the other hand, some feasibility studies were done under IRDP, both as separate projects and as part of some product development projects. The support of this activity appears to have depended on individual regions and officers over time.

One program manager admitted that for innovation projects he felt that market research and feasibility study support had not been used enough. He stated that the major lesson learned for him was that this element was key and should be funded in the future (see also Chapter 5, Program Design and Delivery). As one recipient stated "IRDP should free up funding for feasibility studies for major projects in order to conserve money for feasible projects to go to stage 2."

Conclusion:

The assistance available was not generally perceived as inadequate or too restrictive by the recipients of assistance. Market feasibility studies could have been used more frequently in the opinions of some officers. Our evidence regarding the relative success of market feasibility projects is significant (see Section 6.2) and could logically fit as part of a phased approach to funded assistance. IRDP's insistence on paying contribution money only after companies paid out money caused significant constraints for small companies.

4.2 Sufficiency of Financial Assistance

Question:

Was the level of financial assistance sufficient?

Observation:

The level of financial assistance available under IRDP was generally sufficient, however significant problems occurred when payment expectations were set for recipients at levels which subsequently were not met.

Findings:

4.2.1 Qualitative case study information indicates that assistance offered at low dollar and cost percentage levels was of limited effect in inducing companies to proceed with a project. As one company president who received IRDP assistance stated:

"They shouldn't make you sign the legal agreement that you wouldn't go ahead without assistance if they are only going to give you 20 cents on the dollar".

4.2.2 Our consultations with an expert panel of former Regional Executive Directors, as well as some officer comments indicated that despite the low funding, a significant number of companies may have archieved strong leverage of third party financing as a result of IRDP assistance.

4.2.3 Calculations of the assistance paid out vs. the total project costs for 296 project samples show that the average assistance/total cost ratio under IRDP was:

Innovation:	40%
Modernization/Expansion:	25%
Establishment:	29%
Marketing:	35%
Overall:	30%

Some recipient comments on project funding levels include:

"The government should be willing to more liberally invest in substantial and expensive long term product research and development."

"After all the application process, time and money involved, to discover only 10% approval was very deflating ... this put added pressure on our company's finances, this was something we hadn't planned for."

4.2.4 The consensus of project officers and program managers interviewed was that 25%-40% was adequate in most cases. This range was typical for most IRDP cases.

4.2.5 While the level of financial assistance was adequate for most cases, the consensus of project officers was that it was not worth the bother at low levels. Our statistical analysis showed that satisfaction with the process went down, on average, as sharing ratios declined. On the other hand, one member of our expert panel noted that it was sometimes politically easier to give a low level of assistance then to flatly reject an applicant.

Conclusion:

The level of assistance available for most IRDP projects was apparently sufficient. The IRDP delivery process however, apparently set up a situation in many instances which lead to expectations on the part of recipients. With a reasonably clear idea of the amount to be offered it appears that significant recipient frustration could have been eliminated.

4.3 Effect of Tier System

Question:

What was the effect of the tier system on adequacy?

Observation:

While the evidence is not conclusive, it appears that the tier system may have imposed more of an administrative burden than it was worth. In addition, the tier system may have limited innovation projects in tier 1 by imposing restrictive cost-sharing norms.

Findings:

4.3.1 The opinion of several project and program officers interviewed was that the tier system hindered innovation programming in tier 1 regions due to low sharing ratios. The majority of officers who expressed an opinion on the subject stated that practically the only innovation activity in some provinces was taking place in tier 1 where very strict interpretations of sharing ratio constraints hindered the program's ability to assist truly innovative projects. (i.e. Officers mentioned that pressure was exerted to get the minimum sharing ratio possible to allow projects to go ahead. While this goal in itself would seem to be appropriate, the reality was that in the opinion of some officers the low sharing ratios either stopped projects from proceeding or caused significant financial constraints in many cases.) (see Exhibit 13).

4.3.2 In terms of attracting foreign investment, many tier 1 regions were in direct competition with U.S. sites which offer more attractive assistance (i.e. Western New York competed with Southern Ontario). As pointed out by, during expert consulstations, this will be important to take into account in future regional development programming.

4.3.3 There were no significant differences among recipients in different tiers in terms of the perceived adequacy of financial assistance or the determination of eligible costs. In all groups the vast majority of respondents stated that they were either satisfied or very satisfied with both the financial assistance received and the DRIE determination of eligible costs.

4.3.4 Statistical tests showed no significant differences between tiers in terms of projects' incrementality.

4.3.5 A significant minority of officers felt that the tier system did provide some assistance in redistributing investment out of tier 1 regions and into regions nearby. Most officers did not consider that the tier system induced significant redistribution of investment to "have not" areas.

4.3.6 There was no statistically significant difference in the rate at which respondents in different tiers estimated community effects such as diversifying industries or expanding employment. (eg. Respondents in all tiers noted employment improvement in 49-60% of the cases and diversification of industries in 5-10% of the cases).

4.3.7 One officer pointed to a case analysis which he had undertaken of over 40 projects which had been performed in a certain tier 3 region. In his analysis he found that every project which had attempted to develop business away from the region's natural resource base had failed. In other words IRDP (and its predecessor RDIA) could marginally build on existing strengths but was not successful in truly diversifying the economies of poorer regions.

Conclusion:

The evidence is not conclusive on the effects of the tier system, however, it appears unlikely that it had any appreciably positive impacts in terms of regional development from the evidence gathered from respondents. In the first place, non tier 1 regions were heavy users of the modernization expansion element, a type of assistance which most often increased existing capacity in industries rather than diversifying them or establishing new kinds of operations. Secondly, respondents in non-tier 1 regions did not point to community benefits any more frequently than tier 1 interviewees. In addition, the perceptions of some program officers was that the system may have inappropriately penalized certain firms which deserved assistance in the tier 1 regions. The lack of adequate assistance for the establishment element in tier 1 for example, may have left Canada at a disadvantage in attracting overseas investment (eg. In Ontario, a number of cases were identified in which Southern Ontario has competed head to head with American states to attract German and other offshore Automotive Parts companies. Establishment funding was not available to offset generous State subsidies, putting Canada at a relative disadvantage.) In addition, the consensus of officers interviewed was that the tier system did not eliminate the politicization of regional development incentives, as it may have been intended, but rather was sometimes 'side stepped' by high level decision in spite of its complex objective formula. One officer noted that the formula for developing the tiers itself lead to problems since it measured specific social indicators like income and percent unemployed when in fact these statistics could provide a mistaken picture of a region (eg. a high proportion of senior citizens in an area may give a false impression of poverty due to low income levels).

In summary it appears that the use of the tier system, in most regions, was more costly in administrative complexity, than it was worth in terms of regional benefit. More rigorous economic analysis would be required to determine a precise cost-benefit estimate.

EXHIBIT 14

THE RELATIVE FREQUENCY OF RECIPIENT SUGGESTIONS TO IMPROVE THE PROGRAM

	EDP (83)	IRDP (89)
Eligible Costs	28%	8%
Program Richness	12%	26%
Program Delivery	60%	63%
	100%	

Source: Innovation Element Evaluation (DRIE) 1983 and IRDP recipient survey (ISTC) 1989

... Note recipients switch of emphasis from eligible costs to program richness as sharing ratios declined under IRDP from what they were in EDP.

5.0 PROGRAM DESIGN AND DELIVERY

5.1 Background

The study questions in this issue area have two aspects.

The first area of focus is on program delivery which involves promotion, advice, application, recommendation, delivery and monitoring. As Exhibit 14, opposite, shows programs delivery was a key area for suggested improvement for both IRDP and EDP firms.

The second area of focus involves the impacts and effects of the program's design. The main focus of design is eligibility criteria, eligible costs, sharing ratios, targeted assistance and targeted users (defined both regionally and by sector).

5.2 What were the Impacts and Effects of the Promotion and Advice Functions?

5.2.1 What were the impacts and effects of program promotion?

Observation:

A strong awareness and understanding of the funding agency, in this case DRIE, was the most important factor in program promotion. Awareness of IRDP followed most often from direct contact with the Department. Contacts with colleagues and brochures were also significant promotional tools, however the latter evidently generated some false expectations as to level of assistance.

Findings:

5.2.1.1 59.4% of recipients surveyed gained awareness of IRDP through direct contact with DRIE or other government departments.

5.2.1.2 40% of recipients under the Innovation Element heard of IRDP directly from DRIE compared to 26% of those under the Establishment Element, the next largest percentage.

5.2.1.3 Interviews with program managers revealed that there was limited promotion of IRDP. In the opinions of most of the officers who expressed an opinion, the promotion which did occur was not strategic in the sense that it did not promote a consistent perception of IRDP in the minds of potential target markets.

5.2.1.4 65% of the randomly selected comparison group had heard of the IRDP program. Of those who had heard of the program, about 75% (33% unaided) were aware of innovation and modernization elements, while about 64% (21% unaided) and 55% (6% unaided) were aware of the marketing elements.

5.2.1.5 Experts and Project Officers based in Atlantic Canada commented on the high awareness of funded assistance programs and related agencies in their region. As usage findings show (see Section 3.1), this region had a greater percentage of establishments assisted than any other.

5.2.1.6 Officers noted that the promotion of IRDP did not set up appropriate expectations in recipients. Particularly in less developed areas, there was a perception that too many firms came to IRDP simply because they were in trouble, or needed working capital. Several project officers and one expert mentioned the perceived misleading nature of promotional materials with regard to levels of assistance available. A number of recipients also noted that they felt mislead by the IRDP promotion.

5.2.1.7 In order to further test the assertion that IRDP attracted a significant number of frequent program users, we can hypothesize that frequent users will be significantly more knowledgeable of government programs than non frequent users. In order to analyze this question, we compared the percentage of recipients, rejected applicants, and the comparison group respondents who could name government programs similar to IRDP. We found that 33% of recipients applicants could name other government while just 15% of rejected applicants could name other government programs. 21% of our comparison group who had heard of IRDP could name other government programs. (By implication, the true percentage of the comparison group who could name government programs similar to IRDP is likely less than 15%). This data indicates that awareness appears to lead to familiarity which would seem to lead to more frequent assistance.

5.2.1.8 Forty-four percent of the companies reviewed in a Special Innovation Study of IRDP performed in 1988 had previously received assistance from other federal government sources. Some had received as many as half a dozen other innovation assistance projects from federal sources.

5.2.1.9 Our expert panel consultations with current and former DRIE Regional Directors revealed consensus that the program was poorly promoted due to start-up timing. As one former Regional Director stated in memo form: "The problem was that just as the program got off the ground (1984), it was modified (significant reduction in assistance rates). So, the promotional material in hands of companies was in many cases obsolete (Nov. 1984 cuts) by the time they applied for assistance."

Indeed, our analysis of IRDP promotional documents in comparison to those of current ISTC programs indicates that if anything, the IRDP statements abour such items as eligibility criteria were <u>more</u> clearly stated than those of certain current funded programs.

Conclusion:

IRDP was not consistently promoted. This lead to two important results:

i) The program tended to be used more frequently by firms which were already familiar with government programs.

ii) User expectations were not clearly set. This lead to frustration with assistance levels which were generally lower than IRDP's predecessor programs.

The main problem with promotion appears to stem from an initial lack of strategic direction as to who the intended users of the program were to be, and to what extent they were intended to use the program for what purposes. The indications are that program promotion was left to the individual preferences of regions and project officers. While regional flexibility is an important factor in any program delivery, several officers and managers felt that the lack of consistent directio nhindered their ability to meaningfully direct the program.

5.2.2 What were the impacts and effects of the advice function?

Observation:

The project officers played an important role in providing advice to applicants, given the complex nature of the application process. Among small, less sophisticated applicants, officers also had an important educative role.

Findings:

5.2.2.1 Approximately 50% of recipients approached their project officer for advice. 55% of these firms needed advice on program requirements or the application process. In comparison, only 27% of rejected applicants ever asked for advice. This was one of the only statistically significant differences found between successful and unsuccessful applicants.

5.2.2.2 94% of recipients were satisfied or very satisfied with the advice received from project officers. 92% reported that contacting their officer was very easy or easy. 63% of rejected applicants were satisfied or very satisfied with advice.

5.2.2.3 Several individuals involved in delivery indicated that the provision of technical and financial advice was most important to small businesses. In this respect, DRIE staff and provincial economic development officers had an important educative role. Where support was not available problems sometimes occurred. In the words of one recipient, " The government funds might have been better spent if there had been some back-up technical guidance provided. Most companies applying for this type of grant, who are small, need not only financial help, but technical assistance as well."

5.2.2.4 Case study evidence indicates that obtaining advice was very important to the success of certain types of projects. In particular, the sound judgement and advice of industry experts was found useful in highly technical modernization/expansion and innovation projects. Where such advice, particularly in commercial and market aspects of a proposed project, were not well analyzed our qualitative information indicates that failure often occurred.

Conclusion:

The advice received by applicants from project officers was generally well received. The problem was that not all applicants sought advice, nor did delivery officers always have time to provide the required help.

The evidence suggests that the program was complex enough to make the provision of advice necessary for a large proportion of applicants. It is also likely that this advice, which centred mainly on program requirements and the application process, was important to applicant's success and considered to be of high quality when received. Another interesting conclusion is that advice, especially of a technical or financial nature, is important to small, less sophisticated firms as well as technically complex projects, and that project officers therefore have an important educative role.

5.3 What were the impacts and effects of the application process?

Observation:

The application process clearly constituted a barrier to optimal take-up of the program assistance. Some of the information requirements were inappropriate for smaller projects, the assessment process was inconsistent through time and unworkable in certain respects, and project officers ability or willingness to work closely with an applicant was very important to application success.

Findings:

5.3.1 35.2% of recipients found the application process difficult or very difficult. 47% of rejected applicants found the process difficult or very difficult. This difference was found to be statistically significant.

5.3.2 37% of recipients with fewer than 100 employees found the process difficult or very difficult as opposed to only 21% of recipients with 100 employees or more. This difference was found to be statistically significant.

5.3.3 Several project officers and one provincial economic development officer reported that the cost of applying was prohibitive to both small projects and small companies. "If you were getting less than $100,000 of assistance it wasn't worthwhile", according to one individual. Several respondents and officers noted that consultants and firm accountants were frequently used to prepare applications. While this would not seem inappropriate in itself, problems seemed to arise when the Department would come back to applicants with significant information clarification points. As one small high tech firm president said... "I had for less trouble getting banking assistance. I even had less trouble with venture capitalists,... they (venture capitalists) wanted more information than IRDP did but they knew what they wanted from the start, then came in and got it in three days. With IRDP, they were never clear what they wanted, then we kept getting additional requests in dribs and drabs over about 8 months. By the time

we got assistance, the technology changed and we couldn't go ahead with what we intended." An examination of the project summary forms indicated a wide variance in format and details required through the life of the program.

5.3.4 Members of our expert panel noted that the IRDP application process was a two stage one in which only basic information was initially requested followed by more detailed requirements for feasible projects. Officer and client interviews noted, however, that the initial information requested was frequently added to by various organizationsl levels in the approval process. It was these additional clarifications and requests which appears to have caused significant frustration to both officers and applicants.

5.3.5 Only 2.0% of rejected applicants communicated with their project officer on a weekly basis compared to 43.9% of recipients. This indicates that greater involvement with the project officer improved the chances for a successful application. One such project officer noted that the rates of success differed markedly between officers willing to work with a client to find ways IRDP assistance could be provided within the regulations, versus those whose rigid interpretation of the rules resulted in the quick and early refusal of an application.

5.3.6 28% (ranked #1) of rejected applicants listed the application process as inflexible and inappropriate compared to 8% of recipients. 44% of recipients and 53% of rejected applicants felt that the timeframe of the process was either "too long" or "much too long". For both groups, the two main suggestions for reducing the timeframe were more efficient processing and better decision-making.

5.3.7 Some survey respondents and the majority of staff interviewed felt that the application process was longer than need be mainly because of a lack of local approved authority (refer to Section 1.3.5) and no graduated information requirements for projects of different sizes.

5.3.8 IRDP's delivery time was quicker on average than that of its predecessor, EDP. In spite of this fact, delivery times were still quite a bit slower than what would have been acceptable to clients, based on evidence of their expectations. Our expert panel noted that the 'Board' delivery structure was a significant factor in slowing IRDP decisions.

Conclusion

Evidence suggested that the application process for IRDP was considered difficult by a large proportion of applicants and that it may have presented a serious barrier to initiating an application, especially among small, unsophisticated enterprises. The complexity of the process appears to have necessitated a close relationship with DRIE staff in order to work through the process to a successful conclusion.

Key aspects of the perceived complexity and inappropriateness were insufficient local approval authority and the lack of graduated information requirements for projects of different sizes. The level of analysis required, especially in regard to projections was also considered inappropriate and unworkable, and the forms for this purpose changed frequently resulting in inconsistent assessments and a loss of productive time.

5.4 Appropriateness of Assessment Criteria

Question:

How appropriate were the assessment criteria used to determine project approvals?

Observation:

The key criteria used by officers were economic incrementality, company viability, project viability, benefits to the region/Canada, and project level incrementality. Individual Officers generally had their own weighting scheme and key indicators to determine these criteria, quite separate from official guidelines.

Findings:

5.4.1 Our interviews with project officers and case studies showed that selection criteria differed in what was applied, from what was written. For example at least 4 officers interviewed still referred to the RDIA regulations (a program ended in the early 1980s) as a key source for their selection criteria. Others mentioned that they had really maintained the same basic criteria throughout RDIA, EDP, and IRDP programs. Once basic eligibility had been determined, the most commonly mentioned criteria included:

a) Economic incrementality: - would this project proceed without a negative effect other firms in the region? (sometimes this extended to Canada)

b) Company viability - Could the company carry the project off?

c) Project viability - Did the project look like it would succeed?

d)	Benefits	-	Would the project produce significant benefits to the region/Canada?
e)	Project incrementality	-	Did the company need IRDP assistance to go ahead?

While combinations of the above criteria were the most frequently used by project officers, the IRDP regulations showed a very detailed list of subquestions to be answered in each assessment. Our analysis showed that the paper requirements were answered to varying degrees depending on the time (project summary forms changed at least 7 times over the life of IRDP), the region, and the type of project. (Innovations tended to required complex technical descriptions while other types of assistance relied more heavily on financial analysis).

5.4.2 Audit reports (OAG 1985) (Special Study 1988) show that the detailed criteria listed for IRDP project consideration were not consistently addressed on a case by case basis. In fact, in some cases unwritten criteria were clearly favoured over the written guidelines. As the Auditor General report stated in 1984, "For the period from which most of the cases in the sample were drawn, jobs created and cost per job were key decision factors despite the fact that, unlike RDIP, contributions are not tied to actual job creation."

5.4.3 Interviews and analysis of past reports showed that the organizational ste-up of RIDP may have hindered the consistent appplication of criteria. As one member of our expert panel stated "There was no central 'IRDP Authority'. When (Program Affairs Branch) tried to impose standard criteria, it was shot down by (Program Planning and Management Committee - PPMC)."

Conclusion:

Our discussions with officers and review of files showed that the *de facto* criteria for assistance decisions boiled down to a short set of key questions. Different officers gave these questions different emphasis leading to some inconsistencies. In this regard, extra guidelines, policies and information requirements which did not directly relate to the key questions were apparently given superficial treatment in the assessment process. For many officers, this rendered the IRDP guidelines to be of little use for direction in assessing projects.

5.5 Financial Projections

Question:

To what extent were financial projections useful in helping to assess projects and determine assistance amounts?

Observation:

Financial projections and return on investment calculations were not generally used by officers to assess projects but rather they often served to justify judgements made based on qualitative criteria. Return on invesment (ROI) calculations were particularly problematic in this regard.

Findings:

5.5.1 Several of the officers interviewed noted that ROI calculations were often not useful in the true determination of project assistance. Two key factors were mentioned:

- The norms for acceptable return on investment (ROI) amounts were too rigid. Assumptions could be adjusted to meet acceptable ROI levels. ROI calculations, especially for innovation projects, carried a great deal of uncertainty and therefore wide swings in a projects ROI could be achieved by even slight changes in assumptions. In this way the calculations were often overly precise about very imprecise projects. In some officers' opinions this lead to fictionalised financial analysis which was 'plugged' to meet acceptable standards.

- The risk/return relationship was not explicitly defined. For example, a number of officers mentioned that 20% ROI was an accepted information 'norm' for IRDP project. ROIs above this amount were considered too lucrative for the government to support. The problem is that risk was not always fully accounted for in the calculation. Indeed in the opinion of a couple of officers, the program assessment process showed a bias against truly innovative, high risk project because of the information uncertainty involve in developing a financial analysis, and because the potential ROIs were too high.

Some of the officer comments include:

"ROI calculations were rigged to meet acceptable standards... You couldn't show a return over 20%, otherwise it wouldn't be accepted."

"Most financial forecasts (for innovation projects) are not worth the paper they are written on"

"The IRDP process really didn't suit truly innovative projects, it wanted small adjustments to existing technologies... Things that were more predictable."

Conclusion:

From the evidence gathered through discussions with project officers, it appears that many of the financial forecasting and ROI calculations were not really used by officers in making their assessments. Part of the reason for the continuance of these features in the system may be explained by the emphasis paid to this type of formal justification for assistance by the Auditor General's report of 1984. In the report of OAG criticizes IRDP for not maintaining critical ROI threshold. The report later questions projects which show high ROIs. In focusing on this tangible, but limited indicator, the OAG has fallen into the trap of assuming that somehow a large potential ROI can be equated with no need for public investment. In fact, many high ROI projects are also very high risk projects and are the very types of investments which government is intended to make.

Future funded program management would seem to have the choice between attempting to force officer to conduct an even more detailed and comprehensive financial forecast and ROI analysis using complex sensitivity models and exhaustively evaluating scenarios with different assumptions, or it can ensure that key financial questions are asked and rely on officer judgement. Certainly for projects of high technical risk, the latter route would seem preferable.

5.6 How efficacious was the process for assistance delivery?

Observation:

The delivery of assistance was generally adequate. There were some suggestions that a less elaborate form of monitoring would have sufficed for establishment and expansion projects and that more technical monitoring of innovation projects was required. Financial control appears to have been good, however, the monitoring of repayable contributions was perceived as insufficient.

Findings:

5.6.1 Generally, there were few comments on the manner in which assistance was delivered. This implies that it was considered satisfactory by recipients.

5.6.2 92% of recipients indicated that the frequency of progress reporting was appropriate. 76% felt that the amount of effort was appropriate. 9.2% suggested reducing the paperburden. Some project officers indicated that for establishment and expansion projects the site visit would have been adequate whereas for innovation projects there was some indication that there was not enough technical monitoring and control to adequately track progress. As one project officer commented, "Capital cases are easy, the guy points to an item and you know what you are buying. With innovation it is different. I often can't really tell what it is I am funding."

5.6.3 A review of IRDP by Operations Audit in 1988 and comments from staff have indicated that financial control has improved over the past few years. The main shortfall cited was in the Department's inability to adequately monitor repayable contributions and participation loans. As one program manager stated, "We were just never set up to collect repayables." It appears from the comments received that the staff assigned to this work is not sufficient to achieve the task.

Conclusion:

The evidence suggests that the delivery of assistance was adequate. There were some indicators that a less elaborate method of monitoring is appropriate for both establishment and expansion projects while technical monitoring of innovation projects is difficult and was not adequately performed under IRDP. In addition, though participation loans and repayable contributions were a small percentage of total assistance given, the monitoring of these was insufficient.

6.0 RESULTS

6.1 Rate of Project Success

Question:

What level of incrementality was shown by IRDP projects?

Observation:

IRDP's project incrementality (impact attributable to assistance) was relatively consistent with similar programs reviewed, although IRDP may have had a few more cases with no attributable impacts than the norm. Incrementality varied significantly by element (higher innovation, lower for modernization/expansion and establishment) and by region.

Findings:

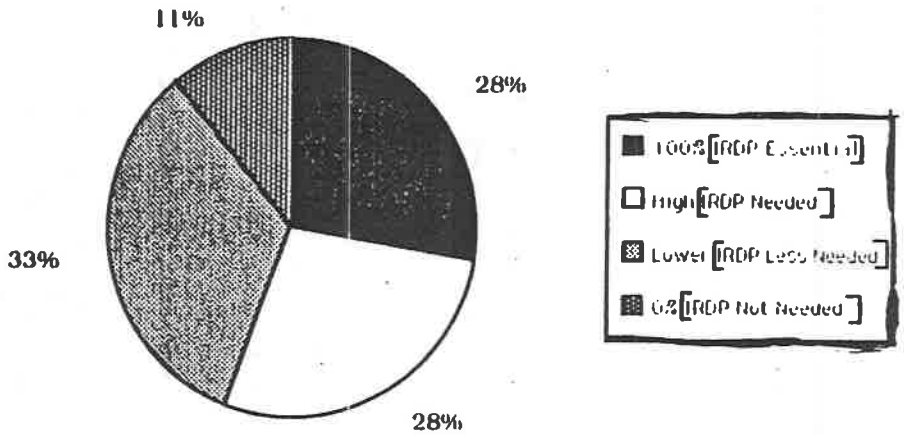
6.1.2 Incrementality is a very important indicator of the impact of the program on the success of the projects assisted. That is, if the assistance was not essential in the first place, the understanding of the project should not be fully attributed to the IRDP. Four levels of incrementality were developed as follows:

- 100% incrementality: IRDP was essential to the undertaking of the project. Respondents indicated that not receiving IRDP would have had a major negative impact, that they could not have gone ahead with the project and that there were no alternative sources of assistance available to them.

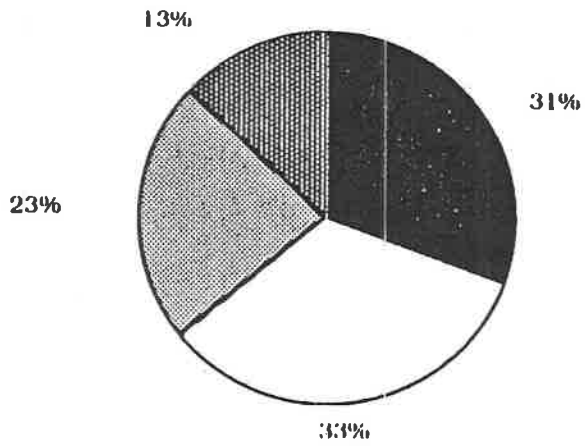
- high incrementality: IRDP was highly needed and important to the undertaking of the project but it was not essential. Respondents indicated that not receiving IRDP would have had a major negative impact but that they could have either gone ahead (different scope or timing) with the project anyways or that they could potentially have found an alternative source of assistance.

EXHIBIT 15
INCREMENTALITY
(NEED FOR IRDP ASSISTANCE ON PROJECT)

Recipients



Rejected Applicants



- lower incrementality: IRDP was less need for the undertaking of the project. Respondents indicated that not receiving IRDP would have had a minor negative impact.

- 0% incrementality: IRDP was not needed for the undertaking of the project. Respondent indicated not receiving IRDP would have had a positive impact or no impact at all on the project.

6.1.3 Exhibit 15, opposite, illustrates incrementality. As can be seen, projects show incrementality in only 11% of the cases whereas there was 100% incrementality in more than a quarter of the cases (i.e. 28%). High incrementality accounted for 28% of the projects and low incrementality for 33%. Further dissemination of the data uncovers the following significant relationships:

- Innovation projects are more likely to be projects of 100% incrementality (i.e. 25%) whereas modernization/expansion and establishment projects are more likely to be of 0% incrementality (i.e. 26%).

- those who did not need assistance (0% incrementality) are more likely than all other groups to indicate that IRDP had no impact on their company's productivity and on its market for goods and services;

- as the need for IRDP increases, so does the likelihood of being able to quantify the company's change in exports, jobs, costs and investments;

- as the need for IRDP increases so does the importance of the program to the success of the project;

- companies with 0% incrementality had significantly more full-time employees when they applied for assistance than any other group; and

EXHIBIT 16

INCREMENTALITY ESTIMATES FOR THREE DRIE PROGRAMS AND ONE NRC PROGRAM

	IRDP [1]	CIRB [2]	EDP [3]	IRAP [4]
Level 1 Would/Did Not Go Ahead	45-53%	35-41%	55%	24-49%
Level 2 Go Ahead - Negative Impact	36-47%	55-59%	39%	45-69%
Level 3 Other Responses	8-11%	4-6%	6%	6-7%

Level 1 = Full incrementality - the project would/did not proceed without assistance
Level 2 = Partial incrementality - the project would show/showed significant negative impacts without funding. (eg. Timing increased, scope reduced, quality affected, etc.)
Level 3 = No incrementality - the project would basically have proceeded (or did proceed) as planned

1 IRDP Evaluation (ISTC) 1989 survey of recipients and rejected applicants. Accurate to within 5% 19 times out of 20. (Question 36 from recipients and question 22 from rejected applicants survey)

2 CIRB Evaluation Report (DRIE) 1986 page 35 (Range represents difference between the response of recipients and rejected applicants)

3 EDP Evaluation (DRIE) 1983 page 142 (No comparison group was used to establish a range).

4 IRAP Evaluation (NRC) 1984 page 22. (Range represents difference between the response of recipients and rejected applicants for IRAP-M and P projects).

- companies with 0% incrementality saw a decrease in their number of full time employees whereas all other groups either remained stable or showed an increase in their level of full-time employment.

The above points appear to indicate that IRDP showed relatively high incrementality. On the other hand, as shown in Exhibit 15, presented earlier, rejected applicants were as likely as recipients to consider the assistance essential (31% for rejects vs. 28% for applicants), of high incrementality (33% vs. 28%) of low incrementality (23% vs. 33%) or even not needed at all (13% vs. 11%). The incrementality figures in this case represent actual effects, not anticipated as in the case of recipients. That is, those rejected applicants with 100% incrementality represent companies who actually did not proceed with the project. Further analysis of the data uncovered no significant relationships between incrementality and a list of key variables. This shows that it is extremely difficult for a project officer to predict project incrementality.

6.1.4 When considering project incrementality, it is useful to compare the observed incrementality, as measured by survey, with that measured in other similar studies. Exhibit 16, opposite, displays the project incrementality found from IRDP respondents vs. that found in three previous studies of similar programs. IRDP is notably similar to other programs in the project incrementality estimated by survey. (Note that a simplified formula was used to allow for the comparison so that the incrementality levels shown differ from those established in 6.1.2) It is notable that while IRDP apparently had a significant percentage of highly incremental projects vis-à-vis other programs, it also had a relatively high proportion of very low or 0 incrementality projects.

6.1.5 Officers and Managers interviewed tended to state that in their opinion, innovation projects were more incremental than capital assistance.

Conclusion:

IRDP has a perceived impact on clients which was similar to its predecessor EDP and its contemporaries CIRB and IRAP. There is some indication that the program funded slightly more projects which would have proceeded without change than other programs.

Significant differences were found in incrementality estimates for innovation projects vs. modernization/expansion and establishment. This coincides with officer opinion.

There were also strong regional differences in project incrementality. This may partially reflect the different emphasis put on different assessment criteria by regions.

6.2 Rate of Project Success

Question:

Did participation in the IRDP positively affect the rate of project success?

Observation:

Projects undertaken with IRDP assistance were more likely than any other types of project (i.e. those undertaken by rejected applicants, as well as those undertaken by non-applicants from the comparison group) to be successful. These projects were successful not only based on the impressions of the recipients but also in terms of a reported positive effect of the project on several aspects of the company's market position.

Findings:

6.2.1 Overall, the program has proved to positively affect those who did receive assistance. The projects were successful, as reported by the recipients themselves (50% very successful; 43% successful).

On the other hand, 53% of all rejected applicants proceeded with the project without IRDP and had a "successful" project (11% very successful; 42% successful). Looking only at those who proceeded, 16% of projects were very successful, while 62% were successful. This indicates that projects undertaken without IRDP assistance were less likely to be successful.

In fact, projects not approved were less successful than projects undertaken by companies who did not even apply for IRDP assistance. This comparison group's projects are more similar in their success to those of the recipients. Specifically, 41% of projects undertaken without even approaching the department for assistance were "very successful" and another 55% were successful.

EXHIBIT 17
SUCCESS OF PROJECTS BY TYPE OF RESPONDENT

	IRDP (%)	Rejects (%)	Comparison (%)
Very Successful	50	16	41
Successful	43	62	55
Unsuccessful	5	18	2
Very Unsuccessful	2	4	2
Average [1]	3.4	2.9	3.3
Base (n =)	(359)	(68)	(42)

[1] Based on a scale of 1 to 4 where a 1 means very unsuccessful and a 4 means very successful. Therefore the higher the average, the more successful the projects.

Exhibit 17, opposite, shows project success by type of respondents.

These findings can be interpreted as follows:

1. IRDP projects tended to be selected on their ability to be "winners".

2. IRDP assistance has a positive influence on resutls.

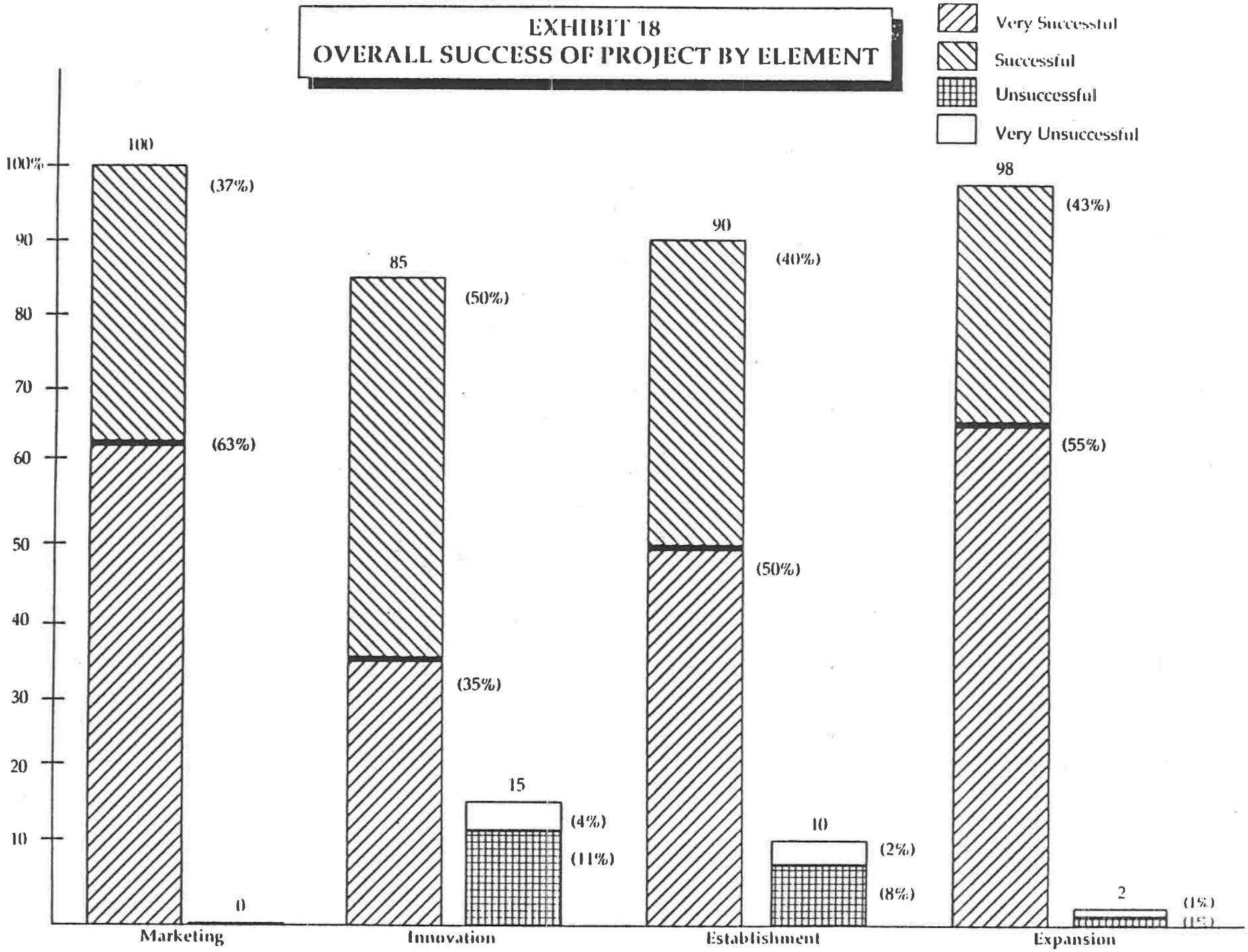
3. IRDP projects were similar in their rate of success to projects being undertaken by other companies located in Canada.

6.2.2 IRDP assistance was considered important to the level of project success reported by the recipients (60% very important, 36% important).

To determine the potential importance of IRDP for rejected applicants, the actual success of the project was compared to the potential success. Assuming that assistance would have been very important to those who did not proceed, it can be deduced that assistance would have been very important to 36% of rejected applicants, important to 43% and not at all important to 21%.

6.2.3 Given the previously reported high level of success of IRDP projects one would expect that all four program elements included in the survey would be highly successful. As depicted in Exhibit 18, opposite next page, this is the case. It is however noteworthy that projects which received assistance under the marketing element were significantly more likely to be very successful (i.e. 63%) whereas innovation projects were significantly less likely to be very successful (i.e. 35%) in the view of respondents (note that this does not factor in the incrementality of projects - whether they would proceed without assistance).

EXHIBIT 18
OVERALL SUCCESS OF PROJECT BY ELEMENT



6.2.4 The program positively affected recipients organization in many ways including:

- the company's financial position (83% of respondents indicated a positive effect);
- the development of new or improved products or processes (82%);
- productivity (79%);
- the company's market for its goods and services (74%);
- the company's employment vacancy rates (73%);
- the company's investments (71%); and
- to a lesser extent the per unit production cost (64%).

Exhibit 19, opposite next page, illustrates the impact of IRDP on the market position of the companies surveyed.

6.2.5 Three quarters (74%) could quantify the impact of IRDP on the company's number of jobs, which averaged 17.

The 72% who could quantify the change in sales indicated increases averaging $2 million.

Those who could provide the extent of the impact of IRDP on the company's investments (i.e. 58%) stated that these increased by an average of $925,000.

Only 52% could quantify the impact of IRDP on the costs of products and services.

Only 40% could provide export information. These stated that IRDP had helped them increase their exports by, on average, $2 million.

These figures indicate that the impact of the program is substantial.

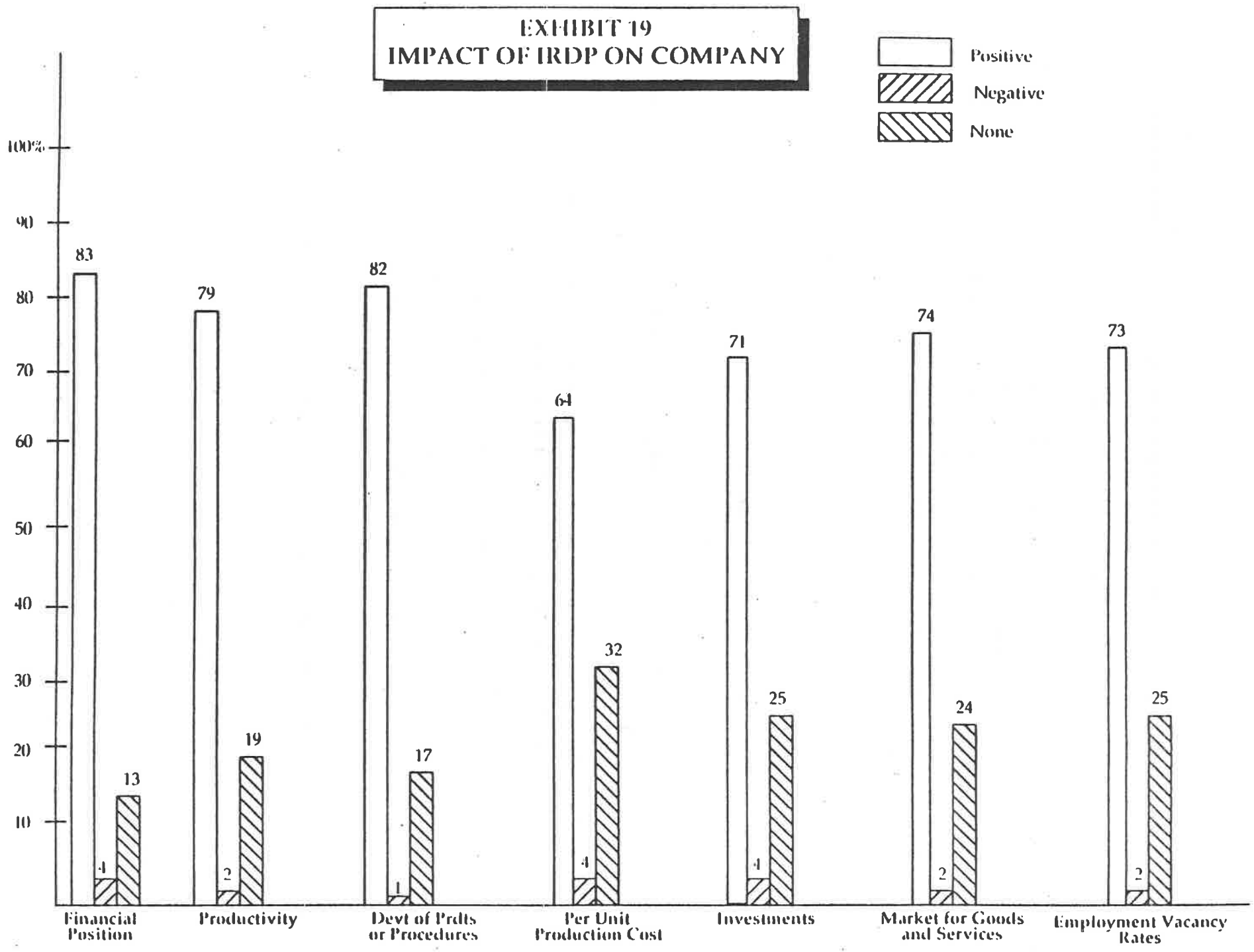


EXHIBIT 19
IMPACT OF IRDP ON COMPANY
Positive
Negative
None
100%
90
80
70
60
50
40
30
20
10
83
4
13
79
2
19
82
1
17
64
4
32
71
4
25
74
2
24
73
2
25
Financial Position
Productivity
Devt of Prdts or Procedures
Per Unit Production Cost
Investments
Market for Goods and Services
Employment Vacancy Rates

Conclusion:

Survey results indicated that projects undertaken with the assistance of IRDP are more likely to be very successful than other types of projects. Benefits to the country include increased jobs and sales, and to a lesser degree increased investment and exports.

6.3 Regional and Economic Development Benefits

Question:

Did IRDP produce significant regional and economic development benefits?

Observation:

While IRDP succeeded in redistributing funds to disadvantaged regions, qualitative evidence indicates that IRDP was likely of limited impact in terms of producing significant regional economic benefits.

Findings:

6.3.1 Relative to the industrial population, IRDP was successful in emphasizing disadvantaged regions in terms of assistance (see S. 3.1).

6.3.2 Not withstanding increased assistance penetration, several factors reduce the probability that these project were significantly successful in regional development:

- disadvantaged regions tended to be heavy users of capital assistance which showed lower levels of incrementality

- case studies and respondent interviews indicated a lower level of diversification effects for many projects. In fact, evidence indicates that projects in disadvantaged regions which strayed from the regions' industrial strengths had very high failure rates.

- tier system was mentioned by several officers as impeding effectiveness (see S.4.2)

6.3.3 Experts noted that the level of assistance required to produce truly significant regional economic effects was beyond the scope of IRDP assistance. In the opinion of regional development experts consulted IRDP funding was really a "drop in the bucket" compared to infrastructural support investments and tax measures in terms of providing real assistance to disadvantaged regions.

6.3.4 In terms of economic incrementality, our interviewers noted a strong resentment of discretionary government funded assistance for large capital projects by a number of respondents. Several respondents said that the had applied for assistance to keep up with a competitor who had received assistance. Resentment also occurred when one applicant got turned down after another had received funding for a very similar project.

Conclusions:

While our findings are largely based on the opinions of experts, respondents and some limited project analysis, the impact of IRDP in terms of true regional economic development would appear to have been limited. Innovation projects were not generally appropriate for disadvantaged regions, and capital assistance projects were not apparently successful in diversifying economies significantly away from core regional industries. This being the case, capital assistance projects showed less project incrementality than others, and probably has less economic incrementality than other forms of assistance.

Further economic analysis would be required to precisely estimate the regional development impact of IRDP.

7.0 SUMMARY OF LESSONS LEARNED

7.1 Introduction

This section will address the lessons learned from the delivery of IRDP in two ways. First, we will consider the results of IRDP vis a vis the original intentions of the program as articulated by the Program Review Task Force. Second, we will consider the results of IRDP in terms of common themes which emerged from our consideration of the study issues, and our multiple lines of enquiry.

7.2 IRDP - Eight Years After

As discussed in Section 1.3.2, the Program Review Task Force (PRTF) in 1982 set out the principles of an 'ideal' program. Our findings can be considered in light of the principles set out for the ideal program at that time.

7.2.2 The Harmonization of Regional and Sectoral Development Strategies

IRDP never truly harmonized regional and sectoral strategies. The impression from our review is that former ITC officers continued to emphasize sectoral development, while former DREE officers continued to concentrate on regional development. This was evident in the different emphases placed by different offices and sub-groups on the five basic criteria used (see Section 5). In addition, our literature review, program and project officer interviews revealed that the program never really promulgated a consistent overall strategy. IRDP, as the flagship of DRIE, really symbolized the bifurcated mandate and operations of the Department.

7.2.3 Support for all Aspects of the Corporate Development Cycle

The rules of IRDP clearly allowed for all aspects of the corporate cycle to be supported. The de facto interpretation and implementation of those rules tended to polarize assistance around capital assistance and innovation, the traditional domains of RDIA and EDP. Market feasibility was never emphasized, establishment projects were limited, and climate and restructuring elements were eliminated after one year.

7.2.4 Assistance Geared to Prospects for Success, Firm Development Plans, and Knowledge of Why Assistance was Received Would be Key

IRDP projects were clearly geared to successful projects and companies, based on firm plans, and required detailed knowledge of why companies needed assistance, Unfortunately, this emphasis may have formed a bias against small firms, truly innovative project, real project-level incrementality, and economic incrementality. Our findings show that the companies which had the easiest time receiving assistance were medium-large firms with straight forward, low risk capital acquisitions. One could argue that such companies are not the primary targets for regional industrial assistance programming.

7.2.5 Costs and Risks are to be Shared

IRDP succeeded in increasing the private sectors' share of risk over what it has been under previous programs. Unfortunately, as noted in 8.2.4 above, this mitigated against certain small firms and risky projects which may have merited government support.

7.2.6 Enriched Support Provided to Firm Disadvantaged by Size or Location

Our findings show that IRDP clearly favoured firms in disadvantaged regions. In terms of firm size, however, our results indicate that because of the preponderance of relatively large firms in advantaged areas doing innovation projects, the program was not significantly more generous to small firms.

7.2.7 Comprehensive Assistance at the Local Level

This principle was never implemented. In fact IRDP operated at less than half the delegated authority level proposed for Regional Directors in the program for most of its existence. (The program operated at 0 level delegated authority for a significant portion of this time - see Section 1.3.3.3).

7.3 Lessons Learned from the Study Issue Analysis

7.3.1 Program Promotion

Consistent program promotion is essential to optional program take-up, administration, user satisfaction, and results. The IRDP clearly promised more than it delivered, resulting in significant failures in many aspects of the program. Not withstanding the political constraints to properly promoting programs, future programs would be well advised to pay considerable attention to the appropriate promotion of program. In as much as program are an intended 'good' for a specific target group, it would seem appropriate to conduct market research for these program similar to that conducted by private companies selling financial services, and industrial products.

7.3.2 Directly Applied Sector Expertise

Global competition, shortened corporate and product development life-cycles, and an increased 'information content' and complexity in all goods and services groups will put a premium on the application of sector expertise to future programs. Our study showed that the proper application of sector expertise was critical success factor for projects. The maintenance of strong networks with sector experts in technical, marketing, and financial domains, will be important. One consideration for future program delivery is to maintain a significant budget to buy the time of experts to consider specific cases or groups of projects.

7.3.3 The Use of Market Feasibility Studies

As noted in 8.3.2, understanding an increasingly complex industrial marketplace is a critical success factor for regional industrial projects. Our findings showed that marketing feasibility studies provided information which was often noted as

critical by respondents - sometimes because they saved a poor investment from occurring. Some resistance was found among current delivery officer in terms of using this type of study. Ways and means must be found to ensure that these attitudes will change if future programming is to stay relevant to target groups.

7.3.4 Close Consultation

Given the increasing need for information and applied expertise for all types of development projects noted above, future programs will need to find ways to ensure close and frequent contact with applicants and recipients. Our findings showed that contact was key to couching user expectations, addressing user needs, performing adequate assessments, and properly monitoring projects. The problem is that frequent contact takes human resource time; a resource in short supply given current government person-year constraints. Creative approaches, possibly such as that employed by the Industrial Research Assistance Program (IRAP) of NRC in terms of cost sharing PYs with other governments/departments and the private sector might be considered.

7.3.5 Authority Delegation

With increased complexity comes an increased need for the direct application of knowledge to situation in the assessment and management of project. Assuming that appropriate overview controls can be implemented, our findings show that it would seem appropriate to delegate authority to the extent possible while still maintaining a full communications linkage with other delivery agents, and senior program management.

7.3.6 Streamlined Assessment Procedures

Time is becoming an increasingly important factor in competitiveness. As such, response times for funding programs must be minimized while still ensuring that key program criteria are met. One interesting finding from our study is that streamlining the process <u>does not</u> necessarily mean streamlining the forms. In

fact, officers noted that the more explicitly that initial information requirements can be presented to program applicants the less time is wasted by all parties. Form this perspective, some of the application techniques developed by Special ARDA and other programs dealing with small business in remote regions may be useful as models for future programs. A quick pre-screen process for applicants would also appear warranted as would graduated information requirements for projects of different sizes.

7.3.7 Selection Criteria

The selection criteria for IRDP, beyond basic eligibility requirements, have remained the same in the minds of most officers over the past 20 years of funded program assistance. The key criteria include:

i) project incrementality
ii) economic incrementality
iii) project viability
iv) company viability
v) benefits of the region/Canada

The problem is that different weightings are given to these factors by different officers. IRDP, as directed by the Auditor General in 1984, tried to impose a complex set of explicit subquestions for these criteria. It didn't work. Future programs must try to find a way to maintain these basically sound decision factors, but implement them in a consistent way. Perhaps a first step would be to develop a consensus and common vision as to what these concepts mean, then to develop a case book of significant precedence which can be referred to as required by delivery officers. (The precedence method is currently being used by the Western Diversification Office).

Exhibit 20

Comparative Programs: General Characteristics

Program & Responsibility Centre(s)	Objective & Purpose	Resources	Target Group	Assistance Provided
IRDP Innov'n · Program Affairs Branch (Coord) · Regional Offices · ACOA & WD	To contribute to the achievement of a diversified & internationally competitive product mix ... by encouraging the development & maintenance of innovation capabilities in ... industry... .	'87-'88 $38 million (offers accepted)	Primarily manufacturers & processors, approx. 36,854 establishments. More generous levels of assistance & project officers resulted in skewing in favour of less developed regions (Tier System)	Primarily non-repayable contributions for directly related personnel, equipment, prototypes, testing, & market studies (33-50% Tier 1 to 4)
AMTAP · Info. Technologies Industry Branch (Coord.) · Regional Offices	Enhance the international competitiveness & growth of the manufacturing & secondary processing industries in Canada by stimulating the use of more advanced manufacturing technology.	'89-90 $1.5 million (allocated). Also, significant expert advisory services are provided	Approx. as per IRDP with funding allocated in relation to provincial 'value added in manufacturing'.	Non-repayable contributions of up to 75% of qualified consultants up to $25,000. PY's of sector experts are also included.
STP · Info. Technologies Industry & Resource Processing Industries Branches (Coord.) · Regional Offices	To enhance medium to long term capabilities in biotechnology, AIM, & Info technology by supporting R&D & technology application alliances.	'89-90 $32.4 million (allocated to grants & contributions). Also, significant expert advisory services are provided	Firms or consortia & other research, engineering & marketing groups (assoc's, institutions) capable of conducting R&D & demonstration re. strategic technologies.	Non-repayable contributions of up to 50% of eligible costs similar to IRDP to a max. of $50,000 to be matched by the alliance. PY's of sector experts are also included.
TOP · Technology Liaison Directorate · Regional Offices	To enhance the competitiveness & productivity of Cdn. industry by supporting org's that provide technology development, diffusion, or skills training in support of industry.	Annual average of Vote 10 funding '88/89 to '92/93 = $ 16.5 million	Non-profit org's, industry assoc's, prov'l research org's, university technology centres providing technology development, diffusion, skills training in support of industry.	Non-repayable contributions to 50% of eligible operating costs of centre for 1st 5 years, capital costs only as 'last resort', to a max. of 75% of average budget over 5 years.
MSDP · Regional Offices	To enhance the competitiveness of Cdn. industry by encouraging companies to undertake technologically innovative ventures in microelectronics & systems development.	$60 million allocated to March 31, 1992.	Non-profit org's, industry assoc's, prov'l research org's, university technology centres providing technology development, diffusion, skills training in support of microelectronics industry.	Contributions to 50% of eligible costs (similar to IRDP) to a max. of $5 million. Full repayment required on contrib's of over $500,000
DIPP · Sector Branches · Regional Offices (Liaisons)	To enhance the competitiveness of Cdn. defence industry by supporting defence R&D, establishment of Cdn. suppliers, capital assistance, market feasibility studies	$1.15 billion over 5 years	Firms, institutions, cooperatives, associations, or individuals wishing to undertake a project in Canada re. the development, manufacture or support of defence related products.	Contributions, repayable if successful, to 75% of R&D eligible costs & 50% of eligible capital & feasibility study costs (similar to IRDP).

8.0 APPLICATION OF LESSONS LEARNED TO FUTURE PROGRAMS

This section was developed after consultation with an expert panel of past and present Regional Executive Directors who had experience delivering IRDP. The objective of this section is to apply the most relevant lessons learned from the IRDP study to current and future ISTC programs. From the direction received from our expert panel and in order to stay relevant to future Departmental needs, we chose to focus our lessons learned on the following:

i) innovation program policy;
ii) instruments for innovation assistance; and
iii) program promotion as part of delivery.

8.1 Innovation Program Policy

8.1.2 What are the appropriate activities for innovation assistance?

Observation:

Current programs tend to assist a broader spectrum of early innovation activities (e.g. market feasibility analysis) than did previous assistance programs. This emphasis appears to be appropriate from our analysis of IRDP results. The significant danger which new programs face is lack of coordination and policy consistency caused by a proliferation of innovation programs offered by federal and provincial governments.

Findings:

8.1.2.1 Exhibit 20, opposite page 74 and 75, shows a profile of various programs currently available for ISTC, NRC, and other government groups compared to IRDP. It is clear that a number of programs cover similar territory.

Exhibit 20 (cont'd)

Comparative Programs: General Characteristics (cont'd)

Program & Responsibility Centre(s)	Objective & Purpose	Resources	Target Group	Assistance Provided
ACI - Automotive Directorate - Regional Offices	Enhance the international competitiveness of the Cdn automotive components industry through an Automotive Parts Advisory Group, Information Services, & Services to Business.	$5.5 million allocated from Vote 10 to 1991. Also, significant expert advisory services are provided	Small & medium sized automotive components manufacturers	Contributions of up to 50% on projects to $10,000 & on implementation of up to $100,000.
MPIP - Québec Regional Office	Enhances the productivity of central Québec manufacturers by supporting consulting services & capital costs toward the establishment & growth of innovative businesses.	$84 million allocated over 5 years to Mar. 31 1993.	Manufacturers in central Québec. Note that similar assistance is provided to resource regions under EDP-I.	Contributions up to 50% for consultants & 25% (to $1 million) of capital.
FEDNOR (Core Industrial) - Ontario (Northern) Regional Office	Enhances the competitiveness of northern Ontario manufacturers & processors by supporting modernization & expansion, R&D on new products & processes, market dev., & feasibility studies.	$25 million allocated over 5 years to Mar. 31 1992 for all Fednor programs.	Manufacturers processors & related services in eligible sectors.	Contributions up to 60% for development (similar to IRDP) & 50% (to $50,000) for consultant services
Western Diversification	To broaden & strengthen the West's economic base by supporting new technology & product development, establishment, market dev., & industry wide productivity improvement. Also provides advisory services.	$1.2 billion Western Diversification Fund.	Manufacturers processors & related services in eligible sectors.	Repayable contributions, often with pay back based upon project profitability & other unique terms & conditions
Atlantic Canada Opportunities Agency	Provides assistance to selected sectors in Atlantic Canada for, among other things, commercial research & development projects & related capital & commercial services costs.	Under review. Innovation projects reported to be a small proportion of total projects.	Manufacturers processors & related services in eligible sectors.	Primarily non-repayable contributions, similar in type to IRDP.
IRAP - NRC	To assist with & promote the use of technology in Canadian firms where it can promote its competitiveness by providing expert advice & networking as well as funded assistance.	$80 million in contributions allocated per year.	All Cdn. industrial firms up to 200 employees.	Primarily non-repayable contributions to the salaries of technical staff plus some directly related costs. Also, substantial expertise on staff to provide direct assistance or referral to expert network maintained under program.

8.1.2.2 The types of innovation activities most frequently assisted in past programs such as IRDP, EDP, DIPP, IRDIA, and PAIT were related to tangible product development costs. More recent programs have assisted less tangible and earlier stages of the innovation and corporate development process. Our study findings indicate that assistance to the earlier stages of the process can often have greater impact on company decisions than assistance coming in at the later stages of the corporate development cycle.

8.2.1.3 Our study findings indicate that activities involving lower technical risk and which lead to near term commercial impacts tended to show lower incrementality, and caused a high degree of resentment amongst the user community.

8.2.1.4 A review of current innovation assistance programs conducted by the study team revealed that there were over 100 federal and provincial programs available to fund innovation projects in 1989/90. This compares to approximately 52 such programs available in 1983/84.

Conclusion:

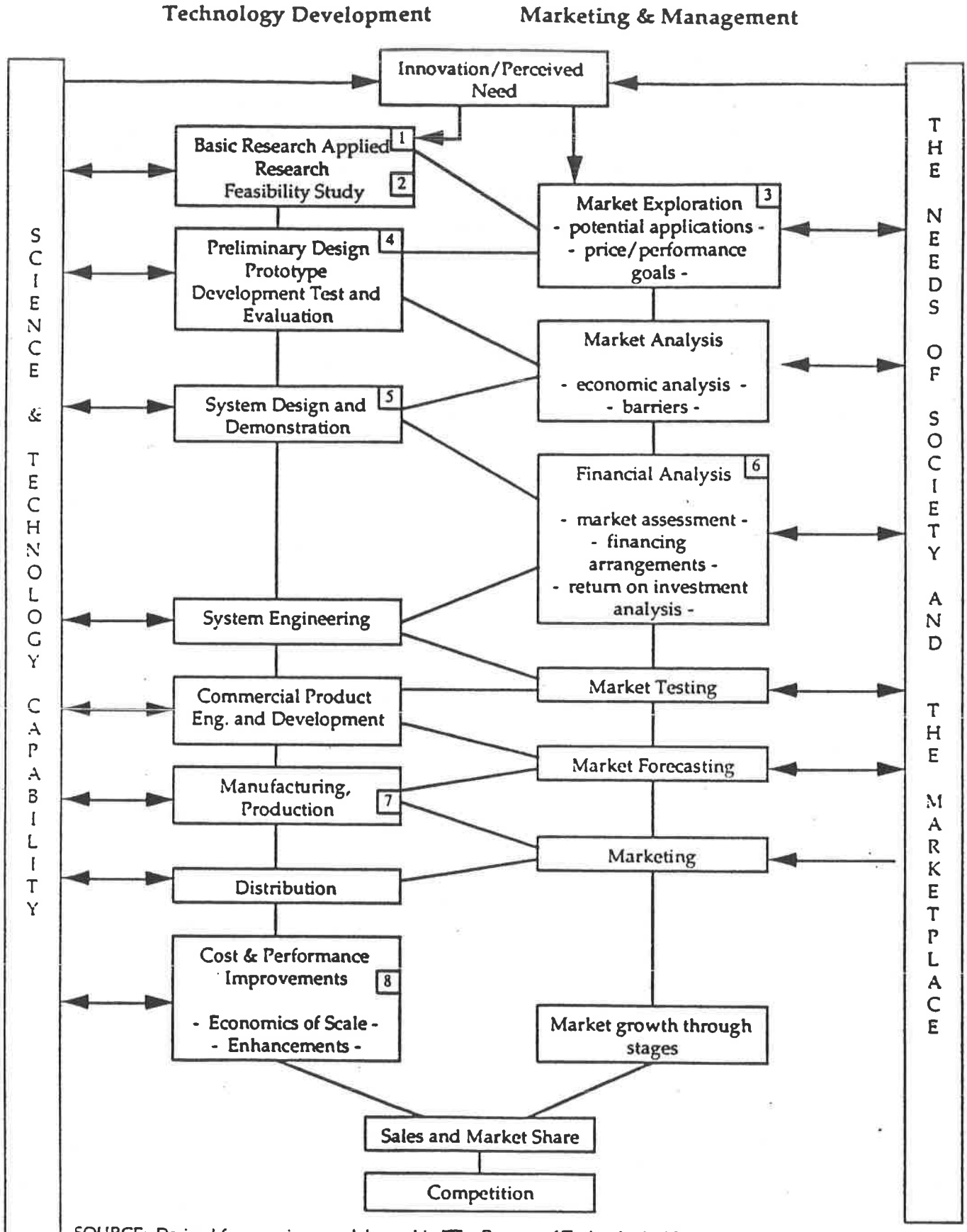
Current ISTC programs have properly focused on high risk innovation activities. The problem seems to be that the plethora of programs now assisting similar functions could lead to lack of coordination and consistency in policy applications.

ISTC and the Federal Government have moved away from the concept of one stop shopping for assistance. The creation of the regional funding agencies has added institutional actors. The 'sectorialization' of funded assistance has increased the number of different programs available. These factors not only make program delivery more difficult due to added potential overlaps, but they also make policy implementation more difficult. (For example, if the Federal Government wished to stop creating extra capacity in a given resource sector, it must now coordinate the activities of more institutional actors and more funded programs than during the IRDP era).

Innovation has been defined as the commercialization of technological change. As such, the process can be viewed as "the confluence of technological capabilities and market needs within the framework of the innovating firm" (Rothwell & Zegveld, 1985). The process is neither entirely "technology-push" nor "demand-pull" in nature. Rather, it can be viewed as a logical sequence of interactions combining both technological and marketing (need) elements.

Exhibit 21, on the following page, shows a number of our study findings in the context of an integrated model of innovation.

EXHIBIT 21
THE INNOVATION PROCESS



SOURCE: Derived from various models used in "The Process of Technological Innovation: Patterns and Influence" Reindustrialization and Technology, Rothwell and Segveld, 1985

IRDP EVALUATION
LESSONS APPLIED TO THE INNOVATION PROCESS

1. Selected case studies found that IRAP assistance was frequently used as a front-end for IRDP-Innovation.

2. Most EDP and IRDP - Innovation projects were begun at the feasibility study - preliminary design stage. In these projects IRDP had more failures but greater impact than at other stages of the process.

3. Preliminary market research was not frequently supported by IRDP. This caused a danger that too many projects were driven by technology. In contrast, venture capitalists perform extensive analysis at this stage before proceeding.

4. Comments from recipients indicated that a gateway concept for funding would be useful whereby successful demonstration of a project prototype would be rewarded with access to further funding.

5. Demonstration projects were not frequently supported but appear to be an important niche for Canadian innovation support in some sectors.

6. Detailed Financial Analysis and ROI calculations, are appropriate <u>after</u> a prototype and market analysis have been done, but were required 'upfront' by IRDP. This caused fictionalized projections, and was inappropriate for many projects.

7. Assistance which was focussed only at expanding production capacity was found to have relatively less impact than assistance focussed on earlier stages.

8. Relatively little IRDP - Innovation assistance went to process innovations, yet they represent over 80% of all innovations in some sectors.

8.2 Program Design

8.2.1 What instruments/program tools should be used for innovation assistance?

Observation:

The optimal program instrument for innovation assistance in Canada would appear to be one which offers flexible and decentralized delivery while maintaining consistent central principles and ensuring linkage to national technology, marketing, finance, and general management expertise. Of the options considered, an adjusted IRAP model would appear best suited to ISTC innovation program delivery.

Findings:

Four current innovation program delivery instruments were chosen for comparison. These instruments represent prominent current programs used to assist innovation in Canada. In this section, they are briefly compared as alternative delivery agents for future innovation programming:

a) the use of tax instruments;
b) the use of provincial delivery agents;
c) procurement policies; and
d) the use of IRAP for program delivery.

a) The use of tax instruments for innovation assistance.

The federal government offers several tax incentives to encourage industrial research and development in Canada, spending about $350 million in 1987. The tax measures include the deduction of capital expenditures on R&D, a partially refundable 20 percent tax credit for qualifying expenditures of large firms, and a 32 percent tax credit on the first $2 million of expenditures by small firms.

Strengths:

- *administrative simplicity* - tax instruments like the ITC are relatively low in administrative burden;

- *no discrimination* - when combined with a refundable credit system, tax instruments do not discriminate against small firms; and

- *perceived fairness* - recent surveys indicate that both the general public and industry consider tax assistance to be fair and appropriate for many areas of industrial assistance.

Weaknesses:

- *low targeting* - due to the 'entitlement' nature of tax instruments may firms outside of the target groups can avail themselves of the program; and

- *low incrementality* - available evaluation evidence shows that tax incentives make little difference in firms' decisions to innovate.

b) The use of provincial delivery agents.

A review of currently available Provincial innovation assistance programs showed that there are over 50 Provincial programs which assist some stage of the innovation process. While most programs target the commercialization end of the innovation spectrum, a significant portion (especially in the wealthier Provinces) make an effort to target strategic technologies. In addition, most provinces have significantly active Provincial Research Organizations.

Strengths:

- *Clear role delineation* - Our analysis shows that provinces have business advocacy and technology departments and provincial research organizations across Canada performing similar assistance functions to those of ISTC. Delegation of delivery to the provinces would simplify program visibility to clients and reduce possible duplication; and

- *Local sensitivity* - Provincial delivery agents may have greater sensitivity in terms of delivery mechanisms, sector expertise, and local knowledge, than federal delivery agents. Given our study findings that company and sector understanding were critical to project success (especially for innovation projects) this would provide a relative advantage to provincial delivery.

Weaknesses:

- *No consistency in assessment standards* - IRDP study findings show that even a federal program delivered by federal regional offices was subject to significant variances in project selection, assessment criteria, and delivery to the point where projects were barely recognizable as falling under the same program element. Evidence from other programs such as ERDA subagreements also indicate that national standards, even for fundamental concepts like incrementality, are nearly impossible with provincial delivery;

- *Program management and coordination problems* - in addition to delivery inconsistency, Departmental experience shows that program management would be greatly hindered by provincial delivery. The administrative burden of running several provincial 'innovation agreements' would greatly complicate management and could hinder financial control. Given the unpredictability of innovation projects this could lead to extreme financial management problems; and

- *Lack of national/international network* - although our evidence is limited to the opinions of a number of regional innovation program experts, there is some indication that provincially run program officers are more reluctant to put clients in touch with expertise outside of their home province. Such a networking barrier would be disastrous for the achievement of ISTC innovation goals to assist companies to become internationally competitive.

c) Federal Procurement

Three federal procurement policies attempt to favour Canadian suppliers: the supplier classification system, the Canadian content premium, and the procurement review mechanism.

Supplier Classification groups suppliers into four categories based on the degree of Canadian activity conducted by each firm.

The Canadian Content Premium (CCP) is a tool used to give preference to bids with higher Canadian content. A price premium of up to 10 percent is applied to bids with low Canadian content when they are competing with bids with higher Canadian content.

The third policy is the *Procurement Review Mechanism*. Procurement review committees made up of officials from Supply and Services and the user department(s), Industry, Science and Technology, Finance, and Employment and Immigration review acquisitions greater than $2 million in value or of any value where the socioeconomic impact is judged to be significant.

Strengths:

Significant dollar effects - The financial impact of federal procurement is significant. A recent study by the OECD indicated that while about $12 million in grants and contributions were allocated to the West in 1985/86, about $300 million in Federal contracts were awarded to the region in that same time period.

International acceptability - While grants for innovation are looked on as an unfair subsidies by some trading partners, all major Canadian trading partners show a domestic bias of some kind in government procurement.

Focus on Solutions Not Process - By definition, procurement encourages the commercialization of innovation. A recent review of the Quebec government's success in developing 3 major homegrown software firms in recent years, compared to none for Toronto, was summed up by one senior software executive as attributable to the fact that while Ontario tended to buy 'process' (i.e. tasks, per diems, etc.) Quebec buys "solutions". In other words, the province has been able to effectively assist the innovation process by focusing on results through its procurement.

Weaknesses:

Entitlement - Federal procurement rules may favour domestic supply, but they must also ensure fairness. This means that rules must 'entitle' firms in certain predesignated groups to be eligible to bid on contracts.

Procurement rules also must ensure value for money which means that they often force the selection of the tried and true lowest cost alternative to perform a given function, rather than the selection of the solution with the highest innovation content.

Regional Pressures - Procurement has been traditionally used as a tool of regional development in Canada rather than a tool to stimulate innovation. This tradition would seem to be difficult to change in current times, especially since it is now within the mandate of WEDO and ACOA to 'lobby' for their respective regions in terms of gaining federal contracts. This 'lobbying' may even be growing in effectiveness given the ballot held by both ACOA and WEDO in the Procurement Review Mechanism.

d) The use of IRAP for Field Delivery.

The Industrial Research Assistance Program (IRAP) program of the National Research Council provides grants and advice to assist with and promote the use of technology in the Canadian firm where technology can help to improve its competitiveness in world markets.

Strengths:

- *Appropriate field force* - the IRAP regional element comprises some 250 Industry Technology Advisors made up of federal NRC staff, contracted Provincial research organization staff, industry association members, and private consulting engineers. The IRAP Field-net outnumber ISTC regional industry sector staff by as much as 5 to 1 in virtually every province. In addition, the IRAP field-net's expertise lies in technological know-how, a critical success factor in innovation program delivery as identified by several recent evaluations;

- *Client Contact* - The IRAP regional element currently has over 30,000 problem solving contacts with industrial companies per year and manages about 5,000 funded projects per annum. The regional element group has a distinct and positive image built-up with companies over several decades;

- *Strong Science Network* - the IRAP science network is already established. Most field services are located in Provincial Research Organizations, and IRAP maintains a strong linkage (through IRAP-R) with NRC and other federal government laboratories. Through the delivery of the Technology Investment Program (TIP) IRAP also has developed strong international connections; and

- *Compliments Provincial Programs* - Our survey of Provincial government program offerings reveals that IRAP links up with several provincial programs in support of industrial innovations. The IRAP niche is to focus on technological aspects of innovation, while provincial programs tend to support the 'business' side of innovation (business planning, market research studies, risk capital etc.,).

Weaknesses:

- *Possible lack of focus* - IRAP has always been run as a program without strong sectoral biases. (The exception has been a recent biotechnology initiative) In fact the program has often gone out of its way to support low technology sectors rather than to assist 'high tech' companies. This culture would be difficult to change in the field-net force; and

- *Technology bias* - the IRAP program is managed and delivered primarily by scientists and engineers. This group tends to promote technological applications to solve problems. In many cases the key element of risk may be related to markets, finance, or general management. From interviews conducted with provincial and federal stakeholders who know IRAP, it would appear that there is a danger that in some cases analysis is overly focused on technology.

Conclusion:

Canada has experimented with a myriad of innovation assistance delivery mechanisms. The mechanisms run the gamet from entitlement programs such as taxes, to discretionary grants based on the good judgement of delivery officers. Control has varied from 100% Deputy Minister approval, to summary field assistance decisions made by officers. Each extreme has its risks.

Tax measures show low targetability and appear to show relatively little influence in decisions to innovate. These programs are also high risk in that small control errors can cost billions of dollars. Procurement policy can channel hundreds of millions of dollars to industry and funds innovation all the way to the solution stage, but its entitlement rules can be troublesome and regional development priorities tend to supersede technology development initiatives. On the other hand, discretionary granting programs can lead to inconsistency and can also show low incrementality if the program becomes decentralized to the point where officers become 'captured' by their client groups.

The ideal delivery mechanism would appear to be one which would uphold some basic program principles, but which would be flexible enough to adjust to the needs of differing clientele at different stages of the innovation cycle.

From the immediate options available, a program which could operate in a mode similar to IRAP, with the infusion of additional marketing, finance, and management expertise would appear to optimize the factors critical to funded innovation program success.

8.3 Program Delivery

8.3.1 How should funded programs be promoted?

Observation:

Current ISTC funded programs show preliminary indications that they are falling prey to similar promotional problems which plagued IRDP. Effort appears warranted to enhance promotional material and to appropriately brief all delivery officers about the strategic, tactical, and operational aspects of these programs.

Findings:

8.3.1.1 The promotion of IRDP lead to significant misunderstanding on the part of the target community as to eligible activities, costs, and approval levels. The causes of these misunderstandings include:

- a lack of clearly articulated and promulgated strategy for the implementation of the program;
- promotional materials which were too vague;
- A hurried promotional program in which maximum program assistance level expectations were set in the minds of potential recipients;
- A lack of initial awareness on the part of delivery officers as to true program characteristics, assistance levels, and information requirements;
- An evolving set of rules for assistance which were hard to understand by all parties; and

- An approval process causing frequent information requests which frustrated applicants and slowed the process.

8.3.2.1 A comparison of AMTAP promotional materials with those of IRDP reveals that AMTAP materials are in fact more vague than those of IRDP.

Where as IRDP promotional material clearly stated that incrementality and benefits to Canada were key criteria, the stated major criteria for AMTAP concern only company commitment, company viability, project viability, and benefits to the company in terms of exploiting the results. The promotional brochure prefaces its listing of criteria with the statement "As program funds are limited it will not be possible to fund all applications." this implies that the only constraint on assistance is access to funding - first come first serve!

Preliminary evidence shows that AMTAP brochures have begun to appear in Business Service Centres without all officers having a complete understanding of the use of the program. In at least one region this has lead to a significant number of program applications outside of the industry sectors considered to be of high strategic priority.

On the other hand, in another region consulted, the flexibility and decentralized authority levels of AMTAP were welcomed by regional delivery officers, and they felt that the program was being appropriately promoted *in spite* of the vague brochures.

Departmental strategic plans consider funded assisted programs to be only one part of a total tool kit of support for industry. The danger with promotions of funded assistance programs, especially in a Departmental culture which is still in transition away from being driven by funded programs, is that program applications, rather than strategic plans, will drive the usage.

8.3.1.2 The Microelectronics and Systems Development Program (MSDP) suffers from a different problem from AMTAP. The promotional brochure for this program listing criteria governing project selection clearly notes international competitiveness, economic incrementality, and benefits to Canada as key criteria. The problem is that the brochure then goes on to list five 'other factors considered in project selection' plus four factors which would render projets ineligible. These 'ineligibility' factors include the fact that a project could be more appropriately funded by the Strategic Technologies Program, DIPP, or IRAP. The problem with this last criterion is that, as shown in Exhibit 20, these programs show significant overlap.

Regional interviews showed that delivery officers would not be able to make a clear eligibility decision based on these stated criteria, never mind a potential applicant. Preliminary evidence indicates that only a handful of organizations have made any attempt to wrestle with such an imposing program image and that the approval process in a number of cases has been torturous.

Conclusion:

Current ISTC programs show preliminary indications that they are falling prey to similar promotional problems which plagued IRDP. The dangers include 'overselling' a program by promoting it in an overly simplified way. This runs the risk of generating unwanted applications. On the other hand promotions may 'undersell' a program to key target groups such that too few of the right applicants will take the time and effort to understand the rules, fulfill the information requirements, and wait extended periods of time for assistance. Efforts appear warranted to enhance promotional material and to appropriately brief all delivery officers about the strategic, tactical and operational aspects of these programs.