Tenth-year Evaluation of the Indirect Costs Program

Final Report

Prepared for:
NSERC-SSHRC Evaluation Division

Prepared by:
Goss Gilroy Inc.
Management Consultants
Suite 900, 150 Metcalfe Street
Ottawa, ON K2P 1P1
Tel: (613) 230-5577
Fax: (613) 235-9592
E-mail: ggi@ggi.ca

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Overview

The objective of the Indirect Costs Program is to foster a healthy and sustainable research environment that is conducive to the optimal use of direct research funding provided by Canada's granting agencies. ICP provides funding to universities, colleges and research hospitals to help cover a portion of the indirect costs associated with the research funded by federal granting councils. It is required that these funds be used in addition to and not replace indirect research support funds provided to institutions by the provincial governments and other federal or private sector sources for indirect costs. The total funds received from all these sources is not expected to cover the entirety of the indirect costs incurred by colleges, universities and their affiliated research hospitals and institutes. ICP's total budget in 2012-13 was $332 million.

Evaluation Scope, Objectives and Methodology

This tenth-year evaluation of ICP covers the entire period from program inception in 2003-04, but much of the data collection focuses on changes since the last evaluation in 2009 (i.e., 2009-10 to 2012-13). ICP was evaluated through both a formative and five-year (or summative) evaluation (in 2005 and 2009, respectively). In line with the Federal Accountability Act, this second summative (tenth-year) evaluation was carried out at the end of a 5-year cycle. In order to understand the program over its ten-year history, the evaluators relied on key findings and recommendations provided in the previous evaluations, and other relevant studies.

The objective of the evaluation was to address the evaluation questions, provide sound and evidence-based conclusions and, from those conclusions, provide concrete actionable recommendations for senior management's consideration. The evaluation was designed to answer five questions that were closely aligned with the five core issues outlined in the Treasury Board *Policy on Evaluation*:

1. To what extent does the program continue to address a demonstrable need and is responsive to the needs of Canadians Institutions
2. To what extent are Indirect Costs program objectives consistent with the federal government a priorities? 2a. To what extent are the Indirect Costs program objectives consistent with Tri-Agencies' strategic outcomes?
3. Is there a role or responsibility for the federal government in delivering ICP?
4. What contribution has ICP funding made to the achievement of outcomes?
5. To what extent is ICP cost-efficient?

The evaluation employed six methods to answer the five evaluation questions:

- Document review;
- File review (including annual outcomes reports for 32 institutions over five years, progress reports and site visit reports);

- Data review;
- Interviews with representatives from 16 organizations (including those from the tri-agency granting councils, Industry Canada and stakeholder organizations external to government);
- Telephone survey of Vice Presidents of Research (VPRs) at 93 institutions funded in the last five years (representing a 73.6% response rate); and
- Case studies (including nine with institutions that focused on a particular area of eligible expenditure and one with the Canadian Association of Research Libraries (CARL) which focused on the research resources area of expenditure and considered data collected by CARL over the last five years.

Conclusions and Recommendations

The evaluation found that there is a continuing need for the program. Many contextual shifts have occurred that put pressure on the indirect cost of research. Institutions are addressing the context changes by using money from their operating budget to offset the difference between what is supported by ICP and actual costs.

The evaluation also found that while there is no clear evidence of the actual amount of the indirect cost of federal grant-supported research, there is some evidence to suggest it is in the 40% to 60% range. What cannot be disputed, however, is that the proportion of direct grants from the tri-agency to ICP funding has been decreasing over time, particularly for large and research-intensive institutions. Moreover, there is evidence that the indirect costs of federal grant-supported research have been increasing over time (due to contextual shifts reported in most lines of evidence). Further information would be required from institutions if ICP wishes to further explore the indirect costs associated with federal grant-supported research.

In the absence of ICP, funding would be redirected from other areas to cover those indirect costs that cannot be easily cut or reduced. As well, VPRs reported that they would likely limit the amount of research their institution does and/or limit the type of research that is done. The downstream impact would be that less research would be conducted in Canada.

The evaluation found that the program is consistent with federal and tri-agency priorities and is aligned with federal roles/ responsibilities

Recommendation 1: It is recommended that the program be continued. There is a clear demonstrable need for the program. Offsetting a portion of the indirect costs incurred as a result of direct federal research funding is consistent with government/ tri-agency priorities and is an appropriate role for the federal government.

In terms of the achievement of outcomes, the evaluation found that the program is meeting its intended outcomes. In particular, there is strong evidence that ICP has been able to make a contribution towards:

- The quality of facilities and the quality and availability of research resources;
- The efficiency and effectiveness of research support (including management and administration, knowledge mobilization, intellectual property); and

- Institutions' ability to meet regulatory requirements.

The evaluation also found that the program is meeting its intended longer-term outcomes as well. There is strong evidence that ICP has contributed to helping institutions and researchers optimize the direct federal research money they receive. As well, there is some evidence that ICP has enabled institutions to compete with other Canadian and international institutions for world-class researchers (although the contribution of this outcome to ICP is less strong). What was ably demonstrated is that ICP funding helps institutions to meet the minimum expectations of researchers and, in some cases, exceed them.

While collecting data for the evaluation and in the analysis of the evidence, the evaluators encountered three key challenges. First, it was observed that two of the final outcomes presented in the logic model (related to regulatory compliance and knowledge mobilization/ commercialization/intellectual property (IP)) are very similar and overlap with the associated intermediate outcomes. Moreover, it was not obvious how these two outcomes would be achieved as a result of the three intermediate outcomes related to facilities, research resources and management and administration. Thus, since the other two final outcomes (optimization of federal direct research funding and increased attractiveness of Canadian institutions) are more overarching and can better be expected to be achieved as a result of any of the intermediate outcomes, the evaluators focused on presenting evidence against only those two final outcomes.

Second, the evaluators found that the concept that ICP funding as causing incremental impact is problematic to demonstrate. As an illustration, while the analysis of CARL data was able to describe important trends relevant to the research resource area, they do not tell the ICP performance story. As well the analysis of the data do not allow for the assessment of the state of the overall research resources environment in the broad post-secondary education sector. It is the conclusion of the evaluators that it is reasonable to expect ICP to help institutions maintain capacity in eligible expenditure areas and even to make some contribution to improvements in these areas. However, changes (improvement/increases, for example) cannot be directly attributed to ICP.

Recommendation 2: It is recommended that the performance measurement strategy be updated to revisit the theory of change in order to better reflect that ICP funding contributes to improvements/ increases in the eligible areas of expenditure (rather than being directly responsible for these improvement/increases).

The third challenge was that the data collection for the evaluation found that smaller institutions (that have received less ICP funding overall) were better able to provide concrete examples(through their outcomes reports and case studies) of where ICP was spent and thus the impact of ICP. This is likely because larger institutions typically add ICP funds to their overall operating budget and spend it wherever operating dollars are needed (in eligible expenditure areas). Thus, only a proportion of indirect costs are supported by ICP and it is difficult to point to any one expenditure as being supported by ICP alone.

Recommendation 3: It is recommended that the program identify a small number of reasonable and achievable key indicators that could be used to for ongoing program monitoring and to effectively support the needs of program evaluation in assessing the

performance of the program. This should result in a revised outcome reporting structure. A new reporting structure for institutions would include more specificity regarding how ICP funding decisions are made and where ICP funding is spent and have less narrative reporting burden (e.g., one example of contribution in each expenditure area could be sought).

In terms of efficiency, the evaluation found that the program is extremely cost-efficient. On its own and in comparison to a similar program administered by SSHRC, the cost of administering the program is very low. While there are some areas where operational efficiencies could be further improved (e.g., simplifying the credit calculation, conducting the credit calculation less frequently), there is no compelling evidence that these must be undertaken although they are potential areas for management consideration to mitigate the risk they present. In particular, the evaluation found that the credit calculation process has been growing in complexity due to the increasingly complex research funding environment (including more and complex collaborative research and the increasingly complex nature of some research). While rare, errors have occurred in the past which, if not caught in time, would result in negative perceptions, mistrust and frustration on the part of institutions.

List of Acronyms

CANARIE	Canada's Advanced Research and Innovation Network
CARL	Canadian Association of Research Libraries
CAUBO	Canadian Association of University Business Officers
CAURA	Canadian Association of University Research Administrators
CIHR	Canadian Institutes for Health Research
CKRN	Canadian Research Knowledge Network
GGI	Goss Gilroy Inc.
ICP	Indirect Costs Program
IDWG	Interagency Data Working Group
ILO	Industry Liaison Office
IP	Intellectual property
IPRC	Interagency Program Review Committee
IT	Information technology
NCE	Networks of Centres of Excellence
NSERC	Natural Sciences and Engineering Research Council
SIG	SSHRC's Institutional Grant
SSHRC	Social Sciences and Humanities Research Council
UBC	University of British Columbia
U of T	University of Toronto
VPRs	Vice Presidents of Research

1.0 Introduction

Goss Gilroy Inc. (GGI) was hired by the Evaluation Division of the Natural Sciences and Engineering Research Council (NSERC) and the Social Sciences and Humanities Research Council (SSHRC) to conduct an evaluation of the Indirect Costs Program (ICP). The evaluation is being overseen by an Interagency Evaluation Steering Committee, which is comprised of the Heads of Evaluation of SSHRC, Canadian Institutes for Health Research (CIHR), NSERC, and a representative of Industry Canada. This draft report presents the findings of this evaluation, as well as conclusions and recommendations that stem from these findings.

The introductory section of the evaluation report includes: background information on ICP (section 1.1); the evaluation approach, including objectives, scope (section 1.2); and evaluation questions (section 1.3). The methods are summarized in Section 2.0, and the strengths, challenges/limitations are also presented. The findings of this study are presented by evaluation question in Section 3.0. The conclusions and recommendations are presented in Section 4.0.

1.1 Overview of the Indirect Costs Program[1]

The provincial and federal governments jointly support academic research in Canada. Provincial/territorial governments provide the basic physical infrastructure as well as operating costs. These operating costs are also covered in part through the Canada Health and Social Transfer to provinces. The federal government primarily provides funds to finance the direct costs of research mainly through three federal research granting agencies: CIHR, NSERC and SSHRC.

To successfully undertake research activities, academic institutions require the following types of resources:

- Researchers and highly qualified personnel for the design and implementation of research;

[1] Portions of the program context, background and profile are reproduced or adapted from the Indirect Costs Program website, *Indirect Costs Program Evaluation Design Report (*Final version of May 2013) and the *Evaluation of the Tri-Agency Indirect Costs Program- Final Report* (July 2009). Information gathered from other sources is referenced directly in the text.

- Infrastructure such as buildings, laboratories and equipment to enable the research design and implementation;
- Time and other resources used by individual research projects (these are the direct costs of research); and
- Indirect institutional costs such as resources associated with research but more difficult to pinpoint. These would include administrative support across research projects, technology or transfer activities at the institutional level, going through accreditation processes, etc.

The term indirect costs in the context of ICP applies to the central and departmental overhead costs that underpin the institution's research activities, but are not attributable to a single research project.

ICP was introduced as a permanent program in 2003-04.

1.1.1 Objective

The objective of ICP is to foster a healthy and sustainable research environment that is conducive to the optimal use of direct research funding provided by Canada's granting agencies. ICP provides funding to universities, colleges and research hospitals to help cover a portion of the indirect costs associated with the research funded by federal granting councils. It is required that these funds be used in addition to and not replace indirect research support funds provided to institutions by the provincial governments and other federal or private sector sources for indirect costs. The total funds received from all these sources is not expected to cover the entirety of the indirect costs incurred by colleges, universities and their affiliated research hospitals and institutes.

1.1.2 Eligibility Criteria

Any degree, applied degree or diploma granting Canadian post-secondary institution whose researchers have received research grants from at least one of the three granting agencies during the three most recent fiscal years for which data is available may receive a grant for indirect costs, subject to the following:

- The institution must be authorized by a provincial or territorial government to grant university degrees, applied degrees or post-secondary diplomas;
- The institution must offer its own degrees or diplomas, and not simply certify that a student is qualified to receive a degree or diploma from another institution;

- The institution must have awarded degrees or diplomas over the past two years or have students registered in the current calendar year or the three subsequent years;
- The researchers of the institution and the research hospitals and other institutes affiliated with it must have received research funding from at least one of the three granting agencies in the three most recent fiscal years for which data is available; and
- In the case of a public institution, the institution must receive the funds for its operating budget directly from a provincial or federal government, and not through another institution. In the case of a private institution, the institution must be not-for profit and not receive its funding through another institution.

Only postsecondary institutions, i.e., colleges and universities, can be recipients of indirect costs funds. However, funds may flow from eligible institutions to the research hospitals and research institutes with which they have formal affiliation agreements.

To maintain their eligibility to receive funds, post-secondary institutions must provide annual financial statements of accounts and outcomes reports, which describe how the program objectives are being met.

The amount of funding each institution receives is determined based on a rolling calculation that considers the grant funding received by researchers at the institutions over the last three years. Eligible institutions are required to submit a request form every year requesting consideration for an indirect costs grant. Institutions are required to outline how they plan to allocate the grant to any of the five categories. Table 1.1 presents the funding formula.

Table 1.1: Indirect Costs Program Funding Formula

Average revenues from CIHR, NSERC and SSHRC research grants	Funding for indirect costs[2]
First $100,000	80%
Next $900,000	50%
Next $6 million	40%
Balance	Percentage calculated annually, based on the total amount available; approximately 20%.

[2] In the event that Parliament changes the amount of funds available for ICP, the program's Steering Committee reserves the right to change the value of its grants.

1.1.3 Governance

ICP is housed within the Canada Research Chairs Secretariat (Chairs Secretariat), which is administered by SSHRC. In order to prepare the credit calculation that determines the funding amount for which each institution is eligible to receive, CIHR, NSERC, SSHRC and the secretariat of the Networks of Centres of Excellence (NCE) provide data to the Chairs Secretariat on their annual funding to eligible postsecondary institutions and their affiliated hospitals and institutes.

ICP is managed by a Steering Committee that is mandated to oversee the program's management and provide advice on its general policy approach. The Steering Committee includes the presidents of CIHR, NSERC, SSHRC, as well as the deputy minister of Industry Canada. The president of SSHRC chairs the Steering Committee.

The Management Committee, a body composed of Vice-Presidents from CIHR, NSERC, SSHRC, as well as representatives from Industry Canada, has both an advisory and decision-making role and reports to the Steering Committee.

The Executive Director of the Canada Research Chairs Secretariat reports to the Management Committee. The Chairs Secretariat administers the program and is responsible for:

- Determining the eligibility of Canadian postsecondary institutions;
- Administering the financial and reporting aspects of the program;
- Conducting performance measurement;
- Conducting evaluation and management audits (through the evaluation division and the corporate internal audit directorate of SSHRC); and
- Reporting on the program to the minister of Industry Canada, the Treasury Board of Canada Secretariat and, ultimately, the Parliament of Canada.

The Interagency Program Review Committee (IPRC) is composed of the Vice Presidents of Programs from each of the three federal granting agencies, the Director of the NCE Secretariat, the managers responsible for data coordination in the three agencies, and the managers of the ICP Secretariat. The IPRC's mandate is to ensure that the decision on whether agency programs should be included in the credit base is made in a consistent, appropriate, and transparent manner.

The Interagency Data Working Group (IDWG) includes the data analysts and their immediate supervisors from each of the agencies and the NCE. The IDWG's mandate

is to provide input in the preparation of the annual institutional list and to provide annual data to the Chairs Secretariat for the calculation of indirect costs grants.

1.1.4 Stakeholders

Various stakeholders and partners are involved in ICP. These stakeholders and partners include the three federal granting agencies, other government departments (such as Industry Canada, the Canadian Foundation for Innovation) and academic institutions. In addition, ICP may work in consultation with additional stakeholders and partners on various projects such as associations of research professionals. Provinces and territories are also stakeholders of the program since post-secondary education falls within their mandate.

1.1.5 Resources

The 2003 federal budget provided $225 million per year through the granting agencies, beginning in 2003-04, to help fund the indirect costs associated with federally-supported research at universities, colleges and research hospitals. Some $20 million was added in 2004, increasing the program's annual budget to $245 million. The 2005 budget received an additional $15 million, bringing total funds for ICP to $260 million a year. A further $40 million was added in 2006, and then $15 million more in 2007-08, bringing the program's yearly budget close to $315 million. In 2008-09, an additional $15 million was added to ICP funding for a total of $329 million.

The 2009 federal budget, however, announced a reduction of $15 million over three years, bringing the ICP budget to $325 million in 2009-10, $322 million in 2010-11 and $315 million in 2011-12. ICP had a budget of $332 million for 2012-13[3]. See Table 1.2 for a summary of the funding history of the program over the last five years.

Table 1.2: Indirect Costs Program Funding 2008-2013

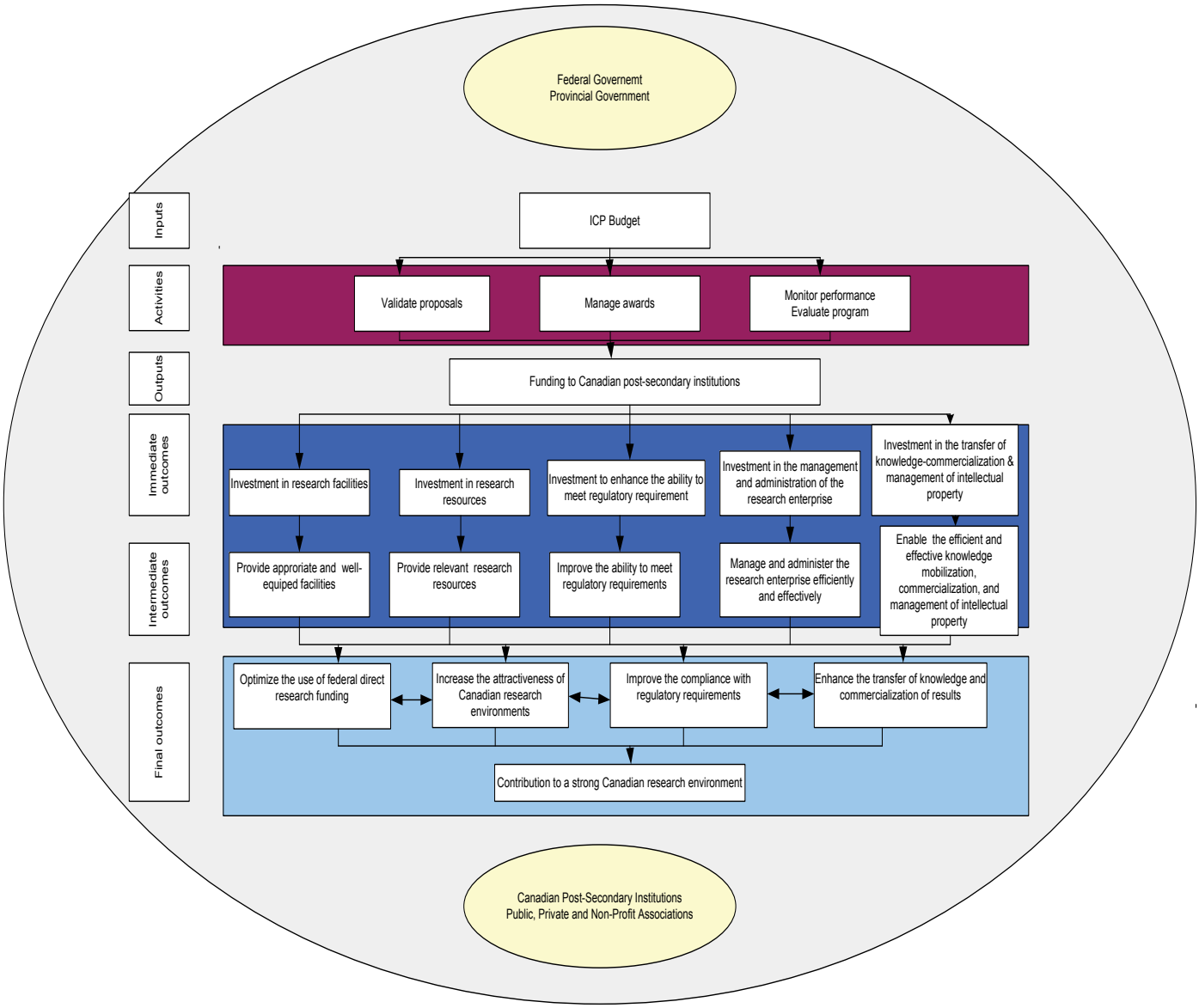
Budget	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Total budget	$329,055,000	$325,379,000	$330,080,000	$332,403,000	$332,403,000
Operational Budget	$400,000	$400,000	$400,000	$400,000	$400,000

[3] Government of Canada (2013). *Indirect Costs Program.* Retrieved from: http://www.indirectcosts.gc.ca/about-au_sujet/index-eng.aspx

1.1.6 Logic Model

The logic model outlines how program activities achieve their intended outcomes and deliver expected results over the short, medium and long term. It depicts current thinking about the causal relationships between the activities, outputs and expected outcomes of the program. Exhibit 1.1 below depicts the logic model for ICP. A detailed narrative of the program's logic model can be found in Appendix A.

Exhibit 1.1: ICP Logic Model



1.1.7 Baseline Metrics Project

The 2009 ICP five-year evaluation reported that there was a need for ICP funding, that the program addressed an important need of the research system and that it had produced positive and desirable outcomes. The report also concluded that an independent assessment of program effects (or impacts) in complex environments such as research institutions, could only be established by comparing the situation with a factual baseline measurement.

In order to address this need, ICP established a Working Group that works in collaborations with the universities and other program's stakeholders, to develop a methodology to establish a baseline measurement of the state of the research environment through the ICP Baseline Metrics project. Consultations have been underway with program stakeholders to seek feedback on the indicators that have been developed for the first three components chosen for immediate action – management and administration capacity, availability and quality of research resources, and degree of regulatory compliance. These three areas were chosen since these were considered more straightforward in terms of identifying indicators. In fact, for one area – research resources – many potential indicators are already collected by the Canadian Association of Research Libraries (CARL).

Because the ICP Baseline Metrics project was still underway at the time of the evaluation (i.e., indicators were still being identified), using these data was not possible for the tenth-year evaluation. As a result of the unavailability of baseline data, the design of the evaluation took a different approach to the measurement of outcomes (described below in Section 2.0). However, since data already exist for the area of research resources (i.e., they are available through CARL), the evaluation did include an analysis of these data in the context of a case study.

1.2 Evaluation Scope

This tenth-year evaluation of ICP covers the entire period from program inception in 2003-04, but much of the data collection focuses on changes since the last evaluation in 2009 (i.e., 2009-09 to 2012-13). ICP was evaluated through both a formative and five-year (or summative) evaluation (in 2005 and 2009, respectively). In line with the Federal Accountability Act, this second summative (tenth-year) evaluation was carried out at the end of a 5-year cycle. In order to understand the program over its ten-year history, GGI relied on key findings and recommendations provided in the previous evaluations, and other relevant studies.

1.3 Evaluation Objective, Issues and Questions

This evaluation was required to address the evaluation coverage requirements in the Treasury Board *Policy on Evaluation* (2009) and the requirement to evaluate transfer payment programs per the Financial Administration Act. The objective of the evaluation was to address the evaluation questions and provide sound and evidence-based conclusions and, from those conclusions, provide concrete actionable recommendations for senior management's consideration.

The evaluation assessed ICP's relevance and performance. Within the two overarching evaluation issues, the evaluation considered the five core evaluation issues, as outlined in the *Policy on Evaluation* (see Table 1.3). The full evaluation matrix can be found in Appendix B. It contains the evaluation matrix issues/questions, selected indicators, methods used and data sources consulted, as well as available baseline data.

Table 1.3: Core Evaluation Issues[4]

RELEVANCE	
Issue 1: Continued need for program	1. To what extent does the program continue to address a demonstrable need and is responsive to the needs of Canadians Institutions
Issue 2: Alignment with government priorities	2. To what extent are Indirect Costs program objectives consistent with the federal government a priorities? 2a. To what extent are the Indirect Costs program objectives consistent with Tri-Agencies' strategic outcomes?
Issue 3: Alignment with federal roles and responsibilities	3. Is there a role or responsibility for the federal government in delivering ICP?
PERFORMANCE (EFFECTIVENESS, EFFICIENCY AND ECONOMY)	
Issue 4: Achievement of expected outcomes	4. What contribution has ICP funding made to the achievement of outcomes?
Issue 5: Demonstration of efficiency and economy	5. To what extent is ICP cost-efficient?

[4] Source: Directive on the Evaluation Function

2.0 Methodology

The tenth-year evaluation of ICP employed six methods to answer the five evaluation questions: document review, file review, data review, interviews, survey and case studies. The implementation of the methodology was a shared responsibility between the NSERC-SSHRC Evaluation Division and the consultant, GGI. In particular, the NSERC-SSHRC Evaluation Division conducted the file and data reviews and GGI conducted the document review, interviews, survey and case studies.

The lines of evidence and the data sources that were consulted for each are presented below in Section 2.1. Section 2.2 presents the strengths and limitations of the methodology.

Data collection was conducted over the period between August 2013 and January 2014.

2.1 Methods

2.1.1 Document Review

The document review helped to answer the evaluation questions associated with the issue of relevance, as well as the evaluation question on achievement of outcomes. The document review served as a source of secondary data for the evaluation. The types of documents reviewed for the evaluation included: government-produced reports (such as Reports on Plans and Priorities) as well as reports produced by stakeholder organizations (such as those produced by associations); research and evaluation reports; Government announcements such as Budget speeches; and policy-related documents.

2.1.2 Data Review

The purpose of the administrative data review was to describe trends in ICP expenditures in Canadian institutions during the last five (5) years (from 2008-2009 to 2012-2013). To this end, relevant program statistics and financial data were reviewed. The ICP grants allocated to institutions were examined with respect to the size of institutions and the five eligible expenditure areas.

The goal of the cost-efficiency analysis was to assess the operational efficiency of ICP. For this exercise, financial data were reviewed in order to assess: 1) the ICP administrative costs and grant expenditures in comparison with SSHRC's Institutional Grant's (SIG) administrative costs and grant expenditures and 2) the operational efficiency and economy of ICP. In addition, key informant interviews were conducted to determine the impact of the credit calculation on program efficiency and to identify potential changes or improvements that could enhance the program's efficiency.

2.1.3 File review

A total of 32 institutions were included in the file review. These institutions were selected based on region, language and participation in the case studies that were included in this evaluation study.

Outcomes reports were reviewed for the time period from 2008-09 to 2012-13. Excel spreadsheets containing both quantitative and qualitative data from the outcomes reports were provided by the ICP Secretariat. Quantitative data consisted of financial information related to the allocation of ICP funds in the five eligible funding categories by institution and their affiliated research institutions and hospitals. Qualitative data consisted of narratives that institutions were requested to provide in order to broadly explain the type and extent of their achieved outcomes.

In addition to outcome reports, the team reviewed 25 reports for site visits completed from 2009 to 2012. Forty (40) per cent of the 25 selected site visit reports belonged to institutions that were included in the sample of institutions selected for the evaluation file review.

The ICP Secretariat also produces progress reports annually based on the information provided by institutions in the annual outcomes reports. Progress reports contain summaries of financial, statistical, and outcomes and are intended to be used to report on the performance results and risks of ICP. Three progress reports were included in the review for 2008-09, 2009-10, and 2010-11.

2.1.4 Interviews

Key informant interviews were conducted with representatives of government organizations that participate in the program (i.e., tri-agency representatives) or represent organizations that have an interest in the program (such as Industry Canada,

academic associations, provinces). The key informant interviews explored evaluation questions pertaining to relevance and cost-efficiency.

For the first type of interview, a number of individuals considered "key informants" were consulted. A key informant is someone who has specialized knowledge of the program and/or of the context in which it operates and/or are the spokesperson for their organization's perspectives on the program/context. Sixteen (16) interviews were conducted with individuals from the following organizations:

- Members of the ICP Steering Committee (n=3);
- ICP stakeholders (including various relevant associations as well as stakeholders internal to government) (n=7);
- Members of the IPRC (n=6);

2.1.5 Survey of VPRs

A telephone survey of Vice Presidents of Research (VPRs) at funded academic institutions was conducted. A telephone survey was used rather than an online survey in order to maximize the response rate with this senior and hard-to-reach population. The survey of VPRs focused on the effectiveness of ICP in addition to other questions.

The list of VPRs was developed using the list of funding recipients over the last five years of the program. Once the list had been assembled, the Evaluation Division issued an email notifying VPRs they would be contacted to participate in the evaluation. Appointments were set with VPRs over a three to four week period to maximize the response rate. Telephone interviews were conducted using a structured guide with largely closed-ended questions (i.e., scales, actual numbers, etc.). Each interview took approximately 20 minutes to complete. Evidence was captured using a survey software package, allowing the production of frequencies and reporting of the percentage of respondents who selected certain responses. Responses to the open-ended questions on the guide were coded and analyzed.

The final size of the survey sampling frame was 140 VPRs. Of these, 93 completed the survey. Following accepted practices for calculating response rates articulated by the Marketing Research Industry Association, while 93 completed the survey, there was a further 10 cooperative contacts who were willing but unable to complete the survey. This results in a response rate of 73.6%.

2.1.6 Case studies

Case studies were conducted to offer an in-depth exploration of specific instances where ICP funds were used to support the five main outcome areas (i.e., facilities, research resources, meeting regulatory requirements, management and administration, and transfer of knowledge and the management of intellectual property).

The case studies for the tenth-year evaluation used specific examples of ICP expenditures as the unit of analysis with a view to providing concrete examples of benefit. In particular, each case study examined the ICP expenditures at one institution in one outcome area (typically the outcome area that has the largest expenditures for that institution while respecting the selection criteria outlined below). For example, a case study focused on the impact of ICP support for a certain facility, or salaries for administrative personnel, or funding for research resources, etc.

For each case study, the evaluation team consulted with the VPR for the institution[5] and up to seven others who might have included the Chief Financial Officer, the Dean(s) of the department(s) benefiting from the funding, the Research Grants Officers and any researchers directly benefiting from the expenditure. In addition, the evaluation team consulted relevant documents pertaining to the expenditure such as university annual report(s), outcome report(s), site visit report, program statistics, and university budgets.

In all, 9 case studies were conducted that followed the approach described above. Cases were selected based on the following criteria:

- Two in each region to ensure a geographic balance;
- At least four case studies from institutions in the U15, two case studies with smaller institutions and two with medium-sized institutions to ensure inclusion of different sized institutions;
- Three in each of the outcome areas pertaining to facilities and management and administration, two in the research resources outcome area, and one in each of the regulatory requirements/accreditation and intellectual property outcome areas to reflect the relative amounts of funding spent by institutions in each areas, according to the latest progress report;
- Willingness of the academic institution to participate, including the availability of interview respondents and data/documents;

[5] As mentioned in Section 4.1.5, all VPRs will be asked to participate in a short telephone survey. Therefore, VPRs at institutions chosen for a case study will be asked to participate in two lines of evidence.

- At least one from a francophone institution.

Fairly recent expenditures (i.e., within the last two years) were selected in order to minimize recall bias and maximize the likelihood that the evaluation could successfully identify and contact relevant key informants.

In addition to these 9 case studies, the evaluation also included a case study that focused on CARL. The main purpose of this case study was to explore the data available that could be used as part of the baseline metrics study. As well, a teleconference with three CARL members (i.e., library directors or equivalent) was conducted.

Table 2.1 displays the 10 completed case studies, along with key selection criteria. Back-ups had to be used in two cases but alignment with the selection criteria was maintained.

Table 2.1: Case Studies Conducted for ICP Evaluation

Institution	ICP Expenditure Area	Size of Institution	Region	Language
Saint Mary's University	Intellectual Property	Large	East	English
University of Toronto (U of T)	Facilities	Research-intensive	Central	English
University of Ottawa	Facilities	Research-intensive	Central	Bilingual
Brandon University	Research Resources	Medium	West	English
Nunavut Arctic College	Facilities	Small	Central	English
Yukon College	Management and administration	Small	West	English
University of British Columbia (UBC)	Management and administration	Research-intensive	West	English
Laval University	Regulatory Requirements and Accreditation	Research-intensive	Central	French
Acadia University	Facilities	Medium	East	Bilingual
CARL	Research Resources	N/a	N/a	English

2.2 Methodological Strengths and Limitations

2.2.1 Strengths

The evaluation benefited from several important strengths, including the use of multiple lines of evidence (with a mix of quantitative and qualitative measures) and the mix of primary and secondary data sources. In terms of methods, of particular mention is the high response rate for the survey of VPRs (74%). As well, both the file review and the case studies offer rich and detailed examples of how ICP is making a difference for institutions across the country, regardless of size.

2.2.2 Limitations/Challenges

While every effort was made to ensure a high quality and rigorous evaluation, the following limitations have been identified:

- When considering the impacts of the program, it is important for the reader to keep in mind that ICP only funds a portion of an institution's total indirect costs of research and therefore can only make a contribution towards the expected outcomes;
- Finding a comparable program for the cost-efficiency analysis was a challenge (no two programs are ever comparable in every way) and therefore the comparison should be treated with caution;
- Despite a good response rate to the survey, the overall number that responses is still quite low (n=93). Therefore, the ability to compare between provinces and size of institution is limited and these comparisons should be treated with caution;
- The file review is based on outcome reports that are written by the institutions themselves and case study interviewees were identified by institutional representatives, as a result these sources of evidence are subject to some degree of bias.

2.3 Presentation of the Findings

2.3.1 Reporting on Outcomes

Referring to the logic model presented as Exhibit 1.1, it can been seen that two of the final outcomes (related to regulatory compliance and knowledge mobilization/ commercialization/intellectual property (IP)) are very similar and overlap with the associated intermediate outcomes. Moreover, it is not obvious how these two outcomes would be achieved as a result of the three intermediate outcomes related to facilities, research resources and management and administration.

Since the other two final outcomes (optimization of federal direct research funding and increased attractiveness of Canadian institutions) can be achieved as a result of any of the intermediate outcomes, the final report will present evidence against only those two final outcomes. The evidence against the final outcomes related to regulatory compliance and knowledge mobilization/ commercialization/IP will be presented with the evidence on the achievement of the associated intermediate outcomes.

Through the course of the evaluation, difficulties were also encountered with reporting the findings on the achievement of outcomes as incremental impacts. While there may be improvements that are attributable to ICP, the evaluation was not able to measure or demonstrate this attribution. The evaluation was able to show that ICP has contributed to the outcomes but not necessarily that the contribution has led to an improvement. As well, in all five expenditure and outcome areas, evidence was available to suggest that ICP funding in these areas have allowed institutions to maintain research support at such a level that they do not have to redistribute funds from other sources.

2.3.2 Presentation of Qualitative Evidence

The following quantitative scale is used throughout this report to indicate the frequency of responses for the survey, key informant interviews as well as the case studies.

- "All/almost all" – findings reflect the views and opinions of 90% or more of respondents;

- "Large majority" – findings reflect the views and opinions of at least 75% but less than 90% of respondents;
- "Majority/most" - findings reflect the views and opinions of at least 50% but less than 75% of respondents;
- "Some" - findings reflect the views and opinions of at least 25% but less than 50% of respondents; and
- "A few" - findings reflect the views and opinions of at least two respondents but less than 25% of respondents.

3.0 Findings

3.1 Program Relevance and Continued Need

Q1 To what extent does the program continue to address a demonstrable need and is responsive to the needs of Canadian institutions?

Summary of Findings
All methods provide strong evidence that there is a continuing demonstrable need for the program. Many contextual shifts were identified in all lines of evidence that put pressure on the indirect cost of research. Institutions reported that they are addressing the context changes by using money from their operating budget to offset the difference between what is supported by ICP and actual costs.

The evaluation also found that while there is no clear evidence of the actual amount of the indirect cost of federal grant-supported research, there is some evidence to suggest it is in the 40% to 60% range. What cannot be disputed, however, is that the proportion of direct grants from the tri-agency to ICP funding has been decreasing over time, particularly for large and research-intensive institutions.

In the absence of ICP, funding would be redirected from other areas to cover those indirect costs that cannot be easily cut or reduced. As well, VPRs reported that they would likely limit the amount of research their institution does and/or limit the type of research that is done. The downstream impact would be that less research would be conducted in Canada.

ICP is responsive to the needs of institutions. While not all institutions allocate ICP the same way, most have a formal structure around how they allocate the funding reflecting the overall importance of the program (to leverage other funding, to minimize transfers of dollars from other sources, etc.). Most often, decisions regarding ICP are taken at the VP level or by committee with participation of VPs.

Context changes

In order to understand whether there is a continuing need for the program, it is important to appreciate how the environment in which research is conducted and post-secondary institutions operate has been changing. In fact, there was a great deal of consistency between lines of evidence (including the document review, interviews, survey, case studies and file review) regarding the most significant contextual shifts that are putting pressure on the indirect cost of research:

- Increased costs associated with maintaining basic infrastructure, such as costs of heat, hydro, supplies, salaries;
- Increased competition for funding resulting in more demand for leading edge technologies and costs to prepare grant applications;
- More collaborative research teams, between institutions and disciplines and with industry resulting in demand in more complex IT systems to support collaboration and additional costs to administer team and collaborative research grants;
- Increased regulatory requirements around ethics, laboratory safety, animal care protocols, occupational health and safety guidelines and reporting requirements, all leading to increased costs to ensure compliance; and
- Increased complexity regarding the nature of research being conducted (including more multi-disciplinary research) resulting in demand for advanced digital technologies, data storage, demand for broader range of resources, etc.

These contextual shifts are all drivers of increasing the indirect costs of research. Indirect costs associated with doing research are increasing and therefore becoming harder to cover with traditional funding sources. Through case studies, institutions reported that they are addressing the context changes by using money from their operating budget.

These shifts do not include the fact that ICP has been covering a smaller proportion of the total tri-agency direct grant funding on a year over year basis. Table 3.1 presents the proportion of direct grant funding covered by ICP since the program's inception. In 2003-04, the ICP contribution was 27% of the value of direct grants whereas in 2011-12 and 2012-13, this amount decreased to 22%.

Large and research-intensive institutions feel the decrease in support more acutely since most of their ICP allotment is calculated on the proportion of direct grants over $7 million. According to Table 3.1, the proportion of direct research grants covered by ICP has decreased from 25% in 2003-04 to 20% in the last two years.

Table 3.1: Percentage that the ICP Grant Represents of Direct Agency Grants According to Institution Size, by Year

Institutions grouped according to the three year average of direct research grants from agencies	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Institutions receiving up to $100,000	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
Institutions receiving more than $100,000 up to $1,000,000	57%	58%	56%	58%	59%	60%	60%	59%	59%	59%
Institutions receiving more than $1,000,000 up to $7,000,000	46%	46%	45%	47%	45%	45%	45%	44%	44%	44%
Institutions receiving beyond $7,000,000	25%	25%	23%	25%	24%	24%	22%	21%	20%	20%
ALL	27%	26%	25%	26%	25%	25%	23%	23%	22%	22%

Source: ICP program data (control sheets).

The extent to which this decreasing proportion is problematic for institutions depends on what can be gathered about the actual indirect costs of tri-agency supported research.

The 2009 evaluation includes a discussion of the actual indirect costs incurred by institutions. However, it was unable to arrive a satisfactory answer: "The fact that there are such wide variations in actual estimates of indirect costs incurred in the research activity suggests that, while there are few conceptual debates on what indirect costs are, there are substantially different points of view regarding the measurement of these costs. With such lack of standardization over the measurement, it is no surprise that the rigorous establishment of the level of the need is difficult."[6]

A recent study conducted by the Canadian Association of University Business Officers (CAUBO) and the Canadian Association of University Research Administrators (CAURA) also attempted to answer this question. The study found that the actual amount of indirect costs, as a proportion of direct costs, is between 40% and 60% (with an average of 49% and a median of 50%). These results are based on responses from 18 of 22 institutions that measure their indirect costs, including 7 small, 6 medium and 9 large institutions (the responses of the other four lie below this range). While 22 institutions that measure indirect costs represents 21% of the possible responding institutions, the study states that "Despite variations in cost measurement practices, and although a more precise figure would be desirable, the estimate of Indirect Costs, on a national scale, in the range of 40% - 60% seems fairly robust."[7]

A review of international practices for the funding of indirect costs reveals that the amount of direct grant funding covered by indirect cost support varies. In the United States, for example, the negotiated amount can be anywhere from 30% to 70%. In the United Kingdom, as of 2005, research grants from the Research Councils include coverage of the full economic cost of the research and Sweden uses indirect cost calculations are part of the formula for funding post-secondary institutions (where indirect costs are estimated to be 52% of direct costs, on average). Ireland makes contributions to indirect costs up to 30% of direct costs. Finland's National Technology Agency pays research overhead on funded projects at 46% of salaries plus on-costs[8] whereas the Academy of Finland is reported to pay overheads of 12.5% of grant funds.

[6] Malatest and Circum Network Inc. Evaluation of the Tri-Agency Indirect Costs Program Final Report. July 7, 2009. Page 36.
[7] CAUBO. Indirect Costs of Research. Results of a joint survey administered by CAUBO/CAURA. October 2013. Page 22.
[8] "that part of the capital cost of a building which arises from the interaction of departments within a building and the building within its site" http://www.scim.scot.nhs.uk/Glossary.htm

Other sources of indirect cost support

Other than tri-agency funding, the most common source of indirect cost support was provincial governments (43% of VPRs chose this option in the survey; multiple choices were possible). While the total number of institutions for some provinces is very small, it is nevertheless informative to identify those provinces where institutions were most likely to identify the province as being a source that covers indirect costs. The survey found 73% of institutions in Quebec (n=16 out of 22) and 67% in Alberta (n=4 out of 6) identified the province as a source of funding whereas less than 50% of institutions in other provinces chose this option: 25% in New Brunswick (1 out 4); 38% in Nova Scotia (n=3 out of 8); 40% in Ontario (n=12 out of 30); 10% in British Columbia (n=1 out of 10).

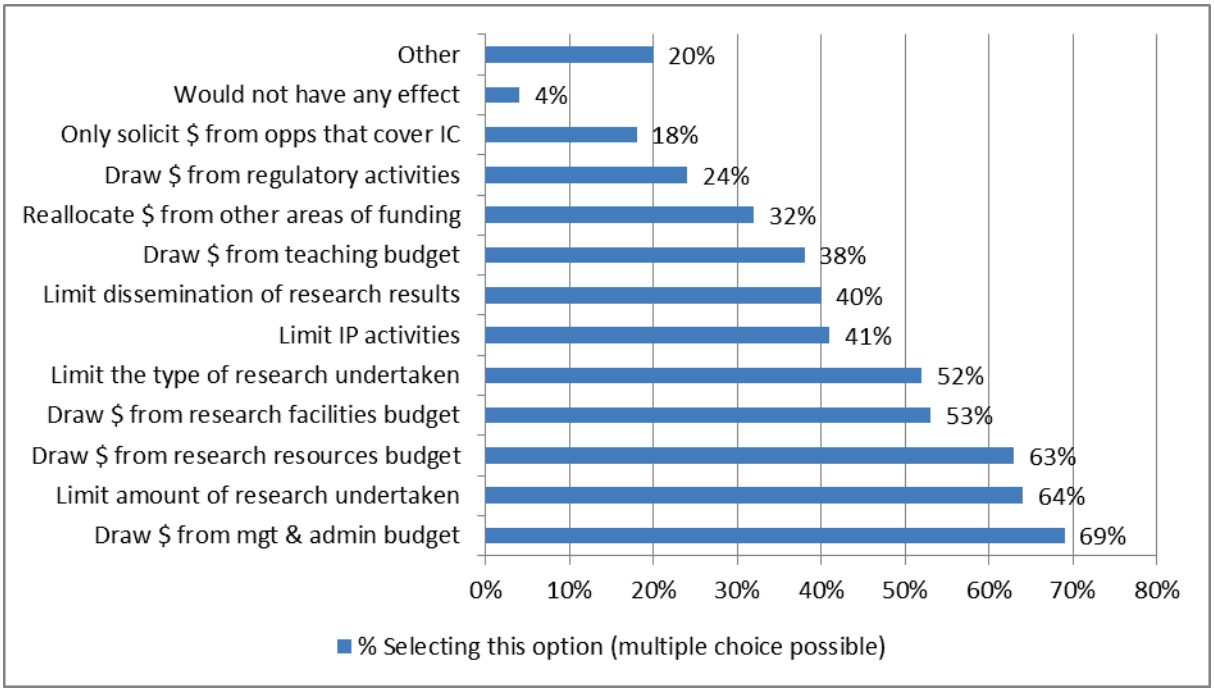
After tri-agency and provinces, the next most commonly cited sources of indirect cost support was the private sector (34%) and other federal government sources (24%).

Importance of ICP – what would happen in the absence of ICP

VPRs who responded to the survey and all those (including VPRs) who participated in interviews for the case studies were asked what would happen in the absence of ICP. The case studies provide an interesting context for the survey results (see Exhibit 3.1 below). Interview respondents in the case studies explained that most indirect cost expenditures are necessary and cannot be easily cut or eliminated (consider for example, hydro expenditures, salaries for librarians and costs associated with ensuring regulatory compliance). As a result, most often, funds would be drawn from other sources. VPRs chose the management and administration budget most often at 69% but other budgets were also popular choices, including research resources budget (63%), research facilities budget (53%) and the teaching budget (38%). Case study interviewees explained that this redirection of funds would ultimately have an impact on the institutions' ability to maintain their infrastructure, teacher to student ratios, introduce new programs and services and support research generally.

According to the file review and survey, in cases where funding could not be redirected from other sources, the implications would be that institutions would limit the amount of research they do (chosen by 64% of VPRs) and/or limit the type of research they do (chosen by 52% of VPRs). Ultimately, the downstream impact of the absence of ICP would be that less research would be conducted in Canada.

Exhibit 3.1: Strategies Employed by VPRs in Absence of ICP (n=90)



Importance of ICP – how do institutions allocate ICP funds

While not all institutions allocate ICP the same way, most have a formal structure around how they allocate the funding reflecting the overall importance of the program. The file review found that institutions use their ICP funds in such a way to increase the likelihood they will obtain other awards in the future and/or to address critical needs of the institution.

The survey of VPRs found that research-intensive institutions are more likely to use a formula (44% versus 24% overall) whereas large and small institutions are most likely to allocate ICP to the area of most need (58% versus 41% overall).

Institutions are generally happy with how they allocate their ICP allotment. From the survey, a large majority of VPRs (84%) indicated that their institution's process of allocating ICP funding was effective (46% indicated to a great extent and 38% indicated to a very great extent).

A proxy for the importance allocated to the ICP funding decision would be at what level the funding allocation decision is taken. Using this proxy, the importance of the decision appears to be high, with 42% of VPRs indicating the decision is taken at the VP level and another 29% of cases where decisions are made by other decision-makers/groups that usually include VP representation. Smaller institutions were more

likely to cite decision-makers such as Directors of Research, likely because the overall funding amount is quite small (under $100K, usually) and these individuals are likely to be familiar with where the funding should go.

Q2 To what extent are ICP objectives consistent with the federal government priorities and Tri-agency strategic outcomes?

Summary of Findings
The program objectives are consistent and aligned with those of the federal government and the tri-agencies

Federal government priorities

While ICP has been mentioned in many budget speeches since its inception, it can be confirmed that it continues to be consistent with federal government priorities by referring to the most recent Budget speech in February 2014. In the Budget document,[9] the Economic Action Plan 2014 allocates $9 million per year in additional funding to ICP. This $9 million was part of a $46 million annual increase to support "advanced research and scientific discoveries" with a view to "bring social and economic benefit to all Canadians." The document goes on to mention that, "since 2006, the Government has increased support for the indirect costs of research by over 25 per cent. The Government will continue to work with the post-secondary sector… to improve the results, awareness and performance measurement of these vital investments."

To further support this finding, ICP was also mentioned in a recent consultation paper[10] issued by Industry Canada seeking input to support the development of a new Science, Technology and Innovation Strategy. In fact, ICP was the only specific program cited in the description of current strategies to support excellence in public and post-secondary research and development (while the paper described other initiatives in a general sense). ICP was mentioned as helping "foster a research environment that enables universities and colleges to make optimal use of federal research funding."

Interviewees (consulted in Fall 2013) who are members of the ICP Steering Committee all agreed that ICP is consistent with federal government priorities.

[9] Government of Canada, The Road to Balance: Creating Jobs and Opportunities, February 11, 2014. Pages 116-117.
[10] Industry Canada. Seizing Canada's Moment. Moving Forward in Science, Technology and Innovation. Consultation Paper. 2014. Page 6.

Tri-agency strategic outcome

As mentioned, the tri-agency ICP is delivered by the Chairs Secretariat which is housed at SSHRC. SSHRC's Strategic Outcome 2.0 is directly linked with ICP through its Program Alignment Architecture (PAA).[11] It states: "Canada has the institutional capacity to enable research and research-related activities in social sciences and humanities, natural sciences and engineering and health." While ICP is not included as part of the PAA's for CIHR and NSERC, the program supports these agencies' overall priorities by reinforcing their research investments by helping institutions ensure that their federally funded research projects are conducted in world-class facilities with the best equipment and administrative support available.

Consistent with their views about the programs' consistency with federal priorities, members of the ICP Steering Committee interviewed for the evaluation all agreed that ICP is consistent with tri-agency strategic outcomes.

Q3 Is there a role or responsibility for the federal government in delivering ICP?

Summary of Findings
Evidence from the document review and interviews strongly supports a federal role / responsibility to offset a portion of the indirect costs of federally-funded research.

Indirect costs were first supported by the federal government with a one-time payment to cover $200 million for indirect costs of research incurred in 2001-02. This one-time payment was mentioned in the December 2001 Budget which also committed to "work with the university community on ways to provide ongoing support for indirect costs that are both predictable and affordable." Thus, at the time, federal support for the indirect costs of federally-funded research was seen as an appropriate role for the federal government.

To recognize growing costs and increasing complexity, Budget 2003 announced ICP as an ongoing program (approved by the government in December 2002). At the time, ICP had a budget of $225 million. Subsequent budgets (including 2004, 2005, 2006 and 2007) have provided increased funding to ICP (with the exception of the 2009 Budget which announced a reduction of $15 million over three years). The most recent budget, Budget 2014 (mentioned above), increased ICP by $9 million.

[11] SSHRC. 2013-14 Part III – Reports on Plans and Priorities (RPP). Accessed March 4, 2014: http://www.sshrc-crsh.gc.ca/about-au_sujet/publications/rpp/2013-2014/rpp-eng.aspx

Authority for the program comes from SSHRC Act, section 4(2)(a). All ICP Steering Committee members interviewed for the evaluation also agreed that delivering ICP is an appropriate role for the federal government.

Internal documents mention that through ICP, the federal government is helping to maintain a sustainable and competitive research environment and helping smaller institutions which do not benefit from the economies of scale realized by larger institutions.

The question of how much of indirect costs should be supported by government does not have a clear answer. However, foundation documents for the program clearly indicate that ICP funding is only intended to cover a portion of the total indirect costs incurred as a result of direct federal grant funding. In the first year of the program (2003-04), the amount of indirect cost support was 27% of the direct research grants funding from the tri-agency. This amount has decreased to 22% in 2012-13.

3.2 Effectiveness

Q4 What contribution has ICP funding made to the achievement of outcomes?

Summary of Findings
Over the last 5-years, $1.65B in ICP funding was distributed to eligible institutions. The spending of ICP funds has been relatively stable across eligible expenditure areas over time. The two largest areas of expenditure were management and administration and facilities. The administrative data reveal that small and mid-sized institutions tend to spend more on management and administration than larger institutions and that larger institutions tend to spend more on facilities and regulatory expenditures than smaller institutions.

The evidence suggests that ICP is contributing to outcomes in each of the five areas of expenditure, including improved quality of facilities, increased availability and access to research resources, improved compliance with regulatory requirements, more efficient management and administration of the research enterprise, and, to a smaller extent, more efficient and effective knowledge mobilization, commercialization and management of intellectual property.

The evidence from all methods indicates that ICP is allowing institutions to optimize their use of federal direct research funding to a large extent. There is evidence that ICP expenditures in all eligible areas are contributing to this outcome, largely by

ensuring the researchers can focus on their research without having to conduct administrative or technical activities.

Evidence from the evaluation suggests that ICP funding has contributed to increasing the attractiveness of Canadian research environments to some extent.

It should be noted that ICP is only one of many contributors to these final expected outcomes (many other factors influence them). In the case of the attractiveness of the research environment, for example, the qualitative evidence was that a good portion of the ICP funding goes to support what is considered to be the minimum requirements for an institution to support research and therefore does not make an institution more attractive solely based on ICP investments.

Immediate outcome: Amounts of ICP investments and trends over time

Over the four-year period of 2008-09 to 2011-12, approximately $1.3 billion in ICP funding was distributed to eligible institutions ($1.65 billion over the last five years and almost $3 billion since program inception in 2003-04). The ICP funds were used by institutions to pay for a portion of the indirect costs they incur related to federally-funded research in the five eligible funding categories. Table 3.2 below lists the total ICP funding allocated by expenditure category across the evaluation period (with the exception of 2012-13).

Table 3.2: Grant expenditures by expenditure category (2008-09 to 2011-12)

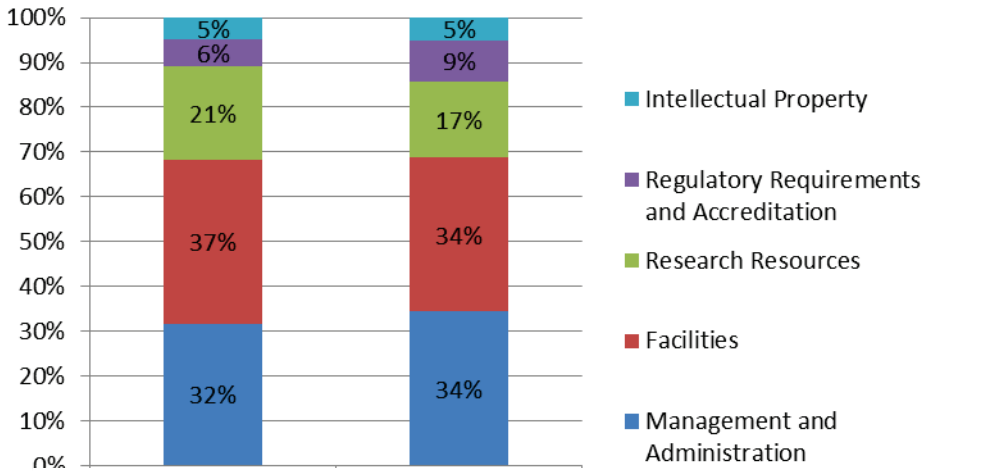
Expenditure category	2008-2009	2009-2010	2010-2011	2011-2012	Total
Facilities	118,272,491	109,746,024	108,917,021	114,493,126	**451,428,662**
Resources	50,424,550	57,827,626	60,499,888	60,569,543	**229,321,607**
Management	113,114,695	109,130,166	115,889,659	112,943,846	**451,078,366**
Regulatory	28,344,866	32,136,397	28,973,150	28,351,886	**117,806,299**
Intellectual property	18,896,490	16,538,787	15,782,282	16,034,332	**67,251,891**
Total	**329,053,092**	**325,379,000**	**330,062,000**	**332,392,733**	**1,316,886,825**

As depicted in Exhibit 3.2 below, from 2008-09 to 2011-12, on average, the institutions funded by the program used their grants mainly for management and administration (35%) and facilities (34%), followed by research resources (17%), regulatory requirements and accreditation (9%), and intellectual property (5%). Institutions' allocation of ICP funding over the five eligible areas of the program was very consistent over the 2008-09 to 2011-12 period, with annual fluctuations ranging between only 1-3%.[12] As Exhibit 3.2 also shows, based on data reported in the 2009

[12] ICP Progress Reports for 2008-09, 2009-10, 2010-11, and 2011-12.

Evaluation of ICP, this consistency in the distribution of funding has remained fairly stable since the program's inception in 2003-04. When drawing conclusions from this data, it is important to keep in mind that, since ICP funding covers only a portion of the indirect costs of research borne by institutions, allocations may not reflect trends in the actual costs or total investments of institutions in these areas.

Exhibit 3.2: Institutions' allocations of ICP funding (2003-04 to 2007-08 vs. 2008-09 to 2011-12)*



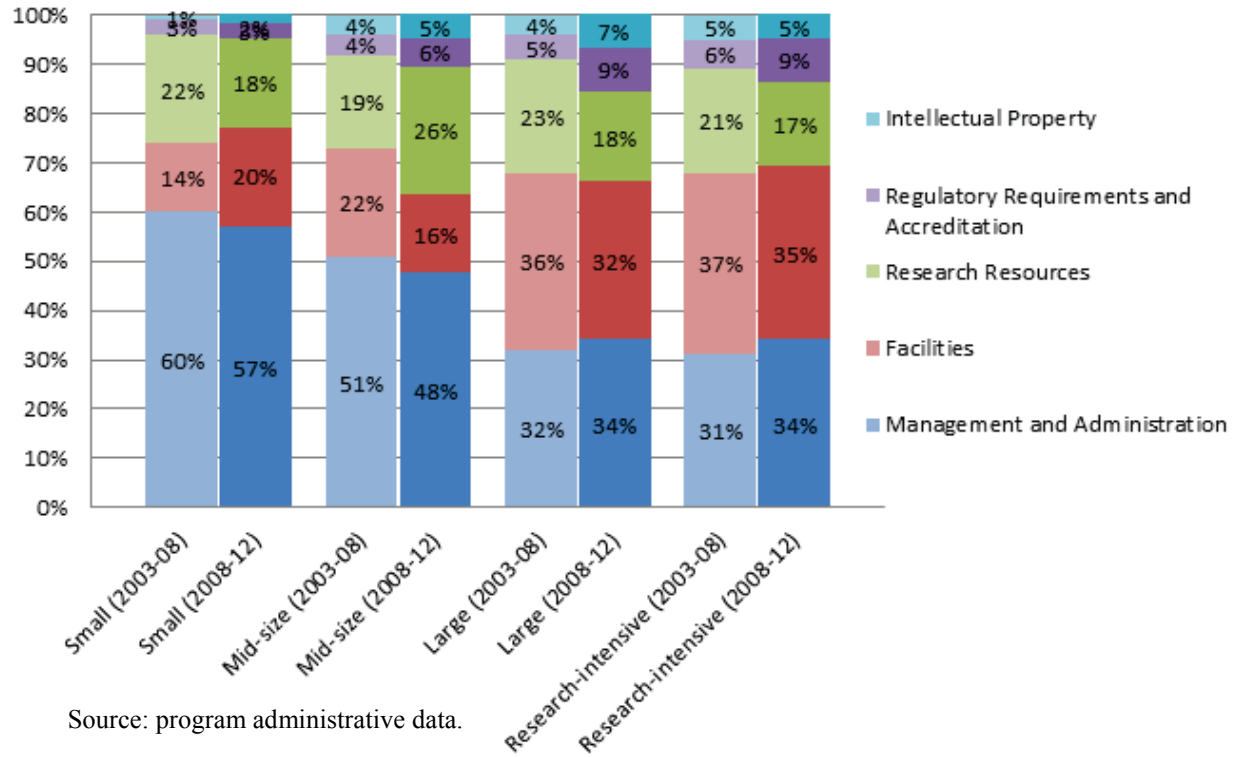
*Data reflects the averages of annual allocations of ICP funding (as reported in annual ICP Progress Reports) across the 2008-09 to 2011-12 period.

As has been the case over the course of the program's life, institutions of different sizes tend to allocate their funding differently with respect to the five expenditure categories. Exhibit 3.3 below illustrates ICP fund allocations by institution size and offers a comparative perspective of 2003-08 ("period 1") versus 2008-12 ("period 2"). The data shows that over the ten year period, small and mid-size institutions generally allotted a larger share of their ICP funding to management and administration (upwards of 48% of their expenditures) than did large and research-intensive institutions. Meanwhile, large and research-intensive institutions directed a greater proportion of their funds to facilities (upwards of 32% of their expenditures) than did small and mid-size institutions, as well as slightly more to regulatory requirements and accreditation.

In terms of trends overtime, allocations of ICP have been relatively consistent over the program's ten year life. In comparing the two time periods (Exhibit 3.3), of the

most notable changes are that small and medium-size institutions allocated a slightly smaller proportion of their ICP funding to management and administration in period 2; small institutions allocated a greater proportion of their funding toward facilities, while medium-sized institutions allocated more toward research resources. Continuing the comparison between the two time periods, contrary to the smaller institutions, large and research-intensive institutions allocated a larger proportion of their ICP funding toward management and administration in period 2, and a smaller proportion to facilities and research resources. As seen in the exhibit below, large institutions allocated a greater proportion toward intellectual property in period 2, while both large and research-intensive institutions allocated a higher percentage toward regulatory requirements and accreditation. Based on the survey of VPRs, this latter trend reflects a change in actual costs; indeed, 76% of VPRs indicated that regulatory requirements have increased in the past five years. This trend was also echoed in other lines evidence (document review, interviews, case studies) that costs associated with regulatory requirements have been increasing.

Exhibit 3.3: Institutions' allocations of ICP funding by institution size and expenditure category (2003-04 to 2007-08 vs. 2008-09 to 2011-12)



Source: program administrative data.

Intermediate outcome: Appropriate and well-equipped facilities

As seen in Exhibit 3.2 above (institutions' allocation of ICP funding), institutions make one of the largest investments in the "facilities" category (average 34% of all ICP funds, 2008-2009 to 2011-2012). The file review indicates that ICP funding contributes to the overall outcome of providing well-equipped and well-maintained research facilities. This in turn helps attract and retain high quality researchers and highly qualified personnel. Furthermore, there is a need for continued updating of facilities, as the institutions themselves age. The context in which research is conducted has changed; if the goal is to retain and attract researchers of international caliber then there is an expectation that universities must have world-class facilities that are up to date with the newest technologies. There is a definitive need to continually refresh technology, highly advanced research equipment, and facilities. In addition, facilities must provide a safe learning and teaching environments.

According to the file review, ICP supports the upgrading, maintenance and training for the proper use of high quality and/or state-of-the-art facilities allowing institutions to conduct leading edge research. Over the last 5 years, 69% of institutions covered existing expenditures and 38% covered new expenditures. For existing expenditures, 86% of institutions spent funds on operating costs of facilities, 67% on technical support for facilities and 63% on renovation and maintenance of facilities. For new expenditures, 47% spent funds on renovation and maintenance.

The University of Ottawa optimizes its ICP allocation by investing in multiuser facilities. The tools required for research are becoming so diversified that researchers across many disciplines can now take advantage of the same facilities. For example, the Centre for Catalysis Research and Innovation (CCRI), globally recognized in the areas of homogeneous and heterogeneous catalysis, is used by over 30 professors from three different faculties.

Among VPRs surveyed, 63% of respondents indicated that ICP funding had a large (40%) or moderate (23%) impact on the enhancement of the number or quality of appropriate and well-equipped facilities at their institution. In total, only 9% of respondents indicated that this question was not applicable to their institution because they had not invested funding in this area.

At Nunavut Arctic College, ICP funds were used to upgrade storage facilities, including the installation of a floor and heating unit. This building houses research equipment and vehicles, and in the past, was too cold to work in or store items during the winter. However it is now possible for researchers to use the storage area year-round. Having a proper storage facility is extremely important to researchers in the North as it creates a safe and productive work environment, and saves significant amount of time and money, that would otherwise be spent on travel and logistics.

According to case studies, the ability to develop or improve facilities would be constrained in the absence of ICP. At large institutions such as the University of Toronto and the University of Ottawa, ICP funds ensure that facilities meet researchers' needs in terms of providing a clean, safe and maintained environment in which they can work. At small institutions (such as Arctic College and Acadia), investment of ICP funding in facilities has been instrumental in creating

a research environment that is both unique and attractive, enabling access to research sites that are not available anywhere else in the world.

Intermediate outcome: Relevant research resources

On average 17% of all ICP funds (2008-2009 to 2011-2012) were directed towards research resources. This is a 4% decrease from the 2003-2004 to 2007-2008 reporting period. According to the file review, ICP funding helps institutions develop world-class research resources. This can lead to improved learning environments, and can foster multidisciplinary research and international collaboration.

The file review and case studies offer some good examples of how ICP investments in research resources have improved institutions' resources and helped meet the needs of users. In particular, memberships have greatly increased researchers' access to resource resources and networks. According to the file review, Acadia invested ICP funds in the university's membership to the Canadian Research Knowledge Network (CKRN). This allows university-wide access to electronic journals, and it is an affordable option for small institutions because prices for electronic journal collections are negotiated down by the CKRN. ICP funding directly helps Acadia provide better research resources for faculty staff and students. Prior to receiving ICP funding, Acadia was unable to join CRKN, and the library subscribed to just 66 journals. According to data provided by the publishers, Acadia's researchers and students accessed 1,767 journals and 38,872 articles in 2011.

According to the data collected by CARL and identified for the baseline metrics project:

- Although there has been a slight increase in the total number of print holdings since 2009-2010, from 40 million in 2009-2010 to 43 million in 2011-2012, electronic resources have been increasing steadily from 10 million in 2007-2008 to 23 million in 2011-2012.
- The number of library materials being consulted in-house by students and faculty has been decreasing over time from an average of 11.9 materials per student in 2007-08 to 4.3 in 2011-12
- Similarly, the number of loans per student has also been decreasing from 14.6 to 7.3 per student over the same period
- The number of professional library staff per student has been decreasing over time from 0.0038 in 2007-08 and 2008-09 to 0.0027 in 2011-12
- Satisfaction with library services has been increasing over time, but only by a small amount

Intermediate outcome: Improved ability to meet regulatory requirements

Regulatory requirements and accreditation is one of the smaller ICP expenditures across all institutions (average 9% of all ICP funds, 2008-2009 to 2011-2012). Meeting regulatory requirements is a core function of the research enterprise, and without this, the integrity of research would be compromised. ICP contributes to the ability of an institution to meet regulatory requirements in areas including:

- Ethical treatment of human subjects;
- Animal care;
- Handling of hazardous materials;
- Environmental protection; and
- Technical support for these areas.

There have been increased levels of regulation in many areas integral to research, such as reporting requirements, ethics, laboratory safety, occupational health and safety guidelines, and animal care protocols. Most survey respondents (76%) cited increased regulatory requirements as a change that has impacted the institutions' ability to adequately support research.

In terms of impacts related to improving the compliance with regulatory requirements, almost three-quarters (72%) of VPRs surveyed reported that ICP had at least a moderate impact in this area (20% reporting a moderate impact and 52% reporting large impact). Similarly, without ICP funding, most IPRC members and a few stakeholders that were interviewed believed institutions would be less able to meet regulatory requirements.

With its extensive animal care facilities and affiliated centers, Laval University has increased its ability to meet regulatory requirements and maintain capacity through the ICP investments. This has been achieved through additional staffing, training and development, including employing a full-time veterinarian for the animal care facility. While this is a significant investment, it ensures that all animals are cared for in a way that is both ethical and in a way that facilitates high-quality research. Without this person on staff, the University would struggle to maintain its current capacity.

An example is the University Health Network, where ICP funds are used to continue the integrity of the Research Ethic Board Processes. The file review indicates that ICP funding covers many areas of importance, including establishing standards, enhancing quality assurance, establishing stewardship committees, and academic reviews of foundation and sponsor funding.

Indeed, the file review and case studies were both able to identify many examples of ICP expenditures in this area that are having important impacts for the institutions. Funds are spent in many areas, including research ethics

board activities, regulatory programs, IT systems to monitor compliance and reporting and streamline applications related to regulatory requirements (such as human subject research); salaries for technicians (such as animal care technicians); administrators; and training.

Intermediate outcome: Efficient and effective management of the research enterprise

ICP funding contributes to the effective and efficient management and administration of universities. Institutions make one of the largest investments in the "management and administration" category (average 34% of all ICP funds, 2008-2009 to 2011-2012). The file review indicated that administrative costs are high at most institutions, partially due to growing demands for compliance (financial, ethical, electronic data storage), IT and reporting requirements and overall research administration costs. Furthermore, research has become increasingly complex in terms of networks and partnerships and these types of research endeavours are more costly to administer. One of the goals of ICP funding in this area is to avoid having researchers in administrative roles that may take the focus away from their research, therefore, it is interesting to note that the survey of VPRs found that almost three-quarters (73%) of respondents indicated that ICP funding had a large (53%) or moderate (20%) impact on the management and administration of the research enterprise at their institution.

Case study findings show that ICP funding enables institutions to carry out research activities, by investing in support staff to allow scientists to focus on their research. Day-to-day operational activities, (ranging from finances and administration, research planning and promotion, human resources, and public relations), are carried out by highly qualified administrative staff.

Yukon College has used ICP funding to hire administrative personnel that focus on supporting the development of larger grant applications and proposals. This has contributed to improved management of the research centre by making the process of applying for funding more strategic, systematic and rigorous. As a result, Yukon has experienced improved success rates in applications. This level of success will allow further growth of the Research Centre, and will continue to allow researchers more opportunities to access external funding.

The file review also demonstrates that institutions have benefited from ICP expenditures for management and administrative activities. From the file review, Yukon and Algoma were able to hire staff to help apply for and administer research funding, and publicize research findings. This has, in turn, resulted in more funding (including core funding) for research at these institutions. Acadia was able to provide salary support for administrative staff, whose primary role is to hold grant information sessions, write newsletters targeting researchers, and promote and celebrate successful research at Acadia. A University of Calgary affiliate, the Institute for Sustainable Energy,

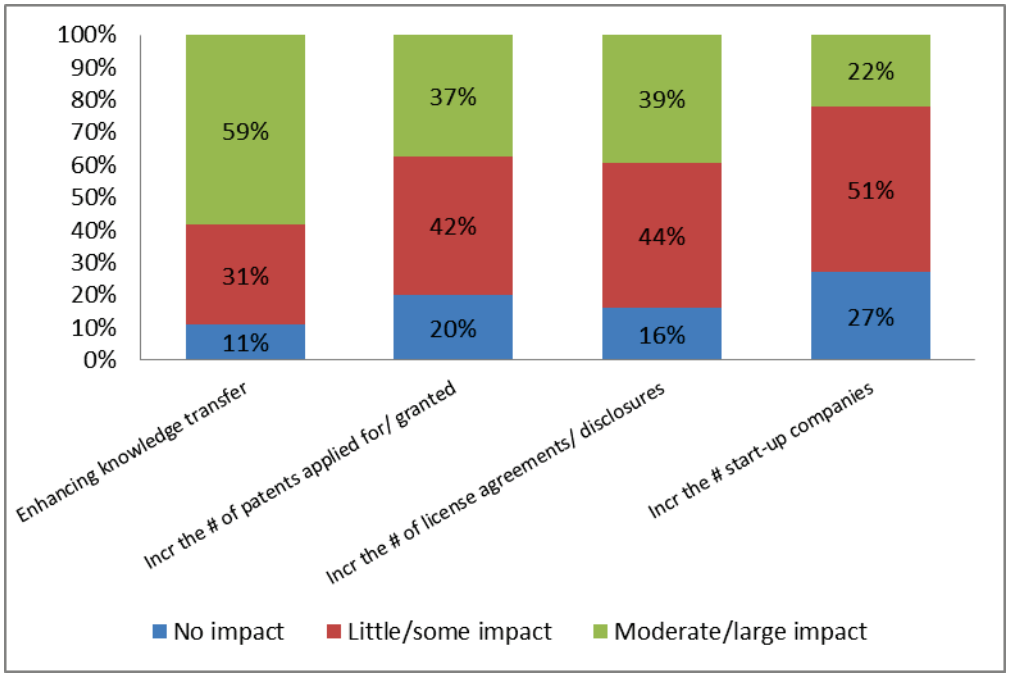
Environment and Economy, used ICP money to fund several outreach events that created public awareness of the departments' research activities. St. Mary's was able to create many positions with the help of ICP funding, including the Dean and Secretary positions within the Faculty of Graduate Studies and Research, and a Research Grants Officer who oversees grant proposals and project plans. The addition of these positions has been beneficial to the entire university.

Intermediate outcome: Efficient and effective knowledge mobilization, commercialization and management of intellectual property (IP)

The effective management of innovative knowledge (intellectual property) is an important outcome of ICP funding. This includes mechanisms to transfer knowledge for commercialization, which is aligned with federal government's goal to transfer research findings from the public to private sector. Intellectual property expenditures are the lowest ICP expenditure across all institutions, at only 5% of all funds (2008-2009 to 2011-2012).

In terms of impacts related to transfer of knowledge and commercialization of results, more than half (59%) of respondents reported that ICP had an impact on knowledge transfer. There has also been some impact on commercialization of results, although fewer institutions indicated that they make investments in this area. Exhibit 3.4 describes these results in more detail. Some differences in the assessment of impact did emerge when the size of the institution was considered. In particular, fewer VPRs from research-intensive and smaller institutions saw an impact on knowledge transfer. Also, more VPRs from research-intensive and large institutions saw an impact on the number of patents, license agreements/disclosures. Finally, more VPRs from research-intensive institutions saw an impact on the number of start-ups.

Exhibit 3.4: ICP Impacts in KM, Commercialization and Management of IP



The file review and case studies highlight many examples of how ICP investments have improved the efficiency and effectiveness of knowledge mobilization, commercialization and management of IP. In particular, Brock used ICP funds to create a number of positions, including an Industry Liaison Manager, a Technology Transfer Officer and a Legal Manager. This has helped to attract new external funding opportunities, and has provided support for negotiating licenses and partnership agreements. Likewise, Waterloo used its ICP funds to support the salaries of its professional technology transfer staff that play a key role in the institution's success in securing government research programs. ICP funds were also used to support three start-up companies at the institution. Finally, Moncton used ICP funds to provide matching funds for Spring Board Atlantic Inc., a shared technology transfer network that supports and promotes commercialization initiatives in association with the majority of Maritime colleges and universities.

Saint Mary's University has established an Industry Liaison Office (ILO) with help from their ICP allocation. The ILO has been instrumental in increasing commercialized research, fostering partnerships, and transferring knowledge and technology to outside parties, in a manner that maximizes benefits to the University.

Final outcome: Optimization of the use of federal direct research funding

Optimization essentially implies whether researchers are able to focus their time on their research and/or that research dollars are being spent on answering the research question. In case studies, respondents were able to provide many examples of how ICP allows researchers and institutions to optimize federal direct research funding.

In sum, ICP allows institutions to: provide high quality and maintained equipment and facilities; pay for salaries of technicians, administrators and other research support personnel (including those in IP); ensure fast and easy access to the necessary research resources; and meet regulatory requirements.

With ICP funding, Brandon was able to pay for their membership in CANARIE (research resources expenditure area). Through CANARIE, highly productive research collaborations are made possible. As well, researchers can make better use of grant dollars by minimizing/eliminating the need to travel to access equipment that is available on the network.

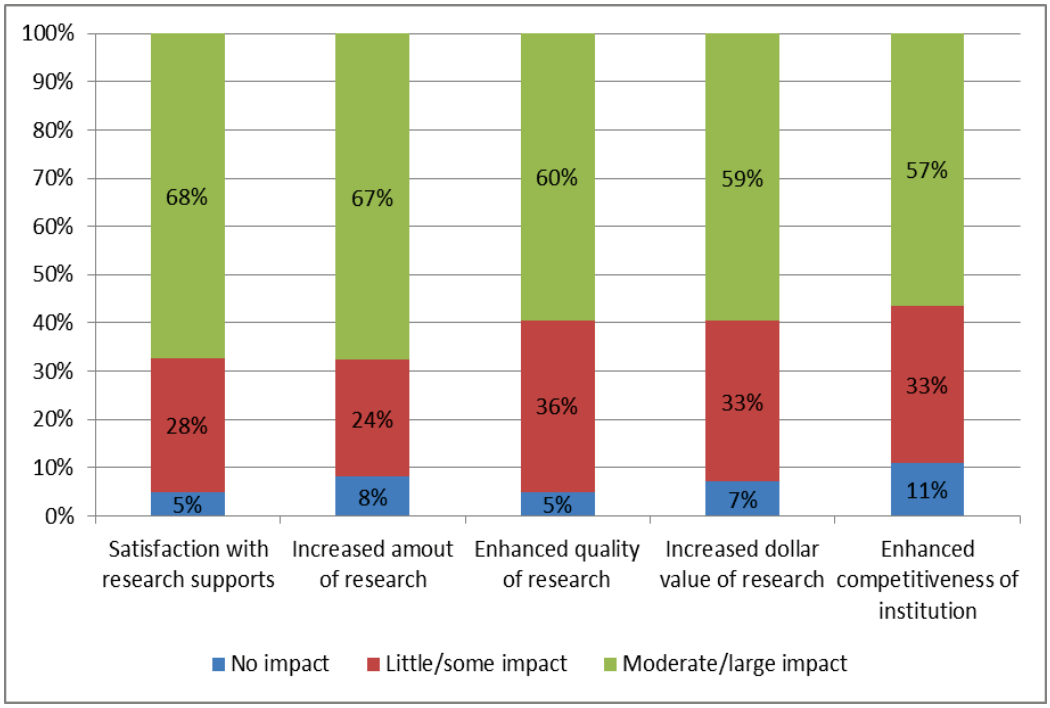
The indicators of optimization explored by the survey of VPRs included:

- Greater satisfaction with research supports among researchers;
- More (in amount and value) research being done;
- Better quality research being done;
- Institutions that are more competitive for research dollars; and
- More researchers doing research at the institution.

UBC used their ICP funding to help pay for systems that support grant writing and manage regulatory requirements. These investments have allowed researchers to focus on their research and spend less time on grant writing, management and reporting and tracking of compliance.

The results from the VPR survey (see Exhibit 3.5) demonstrate that most of these impacts are occurring, particularly satisfaction with research supports (68% of VPRs reported there has been a moderate or large impact of ICP in this area) and the amount of research conducted (67% of VPRs identifying a moderate or large impact).

Exhibit 3.5: Impact of ICP on Optimization of Federal Direct Research Funding



While mentioned by fewer VPRs, ICP seems to be having a positive impact on the quality of research, dollar value of research and competitiveness of the institution on the world stage (with 60%, 59% and 57% saying there has been a moderate or large impact in these areas).

Acadia used ICP funding to help pay for improvements to the facilities and boat that provide access to Bon Portage Island. This translates into faster and more convenient access to the research site and researchers spend less time maintaining the boat and more time on their research.

Final outcome: Increased attractiveness of Canadian research environments

Evidence from this evaluation suggests that ICP funding has contributed to increasing the attractiveness of Canadian research environments to some extent. There was no quantitative data available to directly assess the contribution of ICP to the attractiveness of Canadian research environments, and indeed, determining this causal relationship is not feasible given the large amount of other influencing factors. However, based on the perceptions of those interviewed for case studies, VPRs who were surveyed and the fact that ICP has had some success in achieving its immediate objectives, it is reasonable to say that ICP has made a contribution to making Canadian research environments more attractive.

The case studies offer context for the relative importance of the research environment to attracting researchers to work at certain institutions. In fact, many case study respondents indicated that a large amount of ICP funding goes to support what is considered to be the minimum requirement for an institution to support research. For example, the maintenance of buildings and equipment is not optional, nor is maintaining memberships in regional and/or international networks (such as CKRN or CANARIE) since these are requirements to gain access to research resources in a cost-effective manner and to collaborate internationally (especially for small institutions). Therefore, those consulted for the case studies explained that ICP does help an institution meet the minimum requirements. Respondents in a few case studies went further to say that, since funding does not have to be reallocated to cover the expenses paid by ICP, institutions are able to increase their attractiveness to researchers by making strategic investments (such as in leading edge facilities and/or equipment, innovative programs or areas of study).

> The intellectual environment at U of T, including facilities and equipment, is what attracts people. The goal of the institution is to be the best, and from a faculty member's perspective, there is a minimum standard in facilities/ equipment that must be met. Good facilities are a strong selling feature, as well as having adequate lab space for researchers.

The evaluation team surveyed VPRs about their perceptions of ICP's contribution to this objective. The majority (68%) surveyed for this evaluation indicated that ICP had a large (39%) or moderate (28%) impact on increasing the attractiveness of the Canadian research environment. This finding is consistent with ICP annual progress reports from 2008 to 2012 which indicated that "the proportion of institutions reporting general positive impacts of their grants on the attraction and retention of researchers was at least 89% for each year."

> At Saint Mary's ICP funding was used, in part, to support the development of an ILO. The university is attracting high caliber graduate students, because they have the opportunity to take research ideas, and turn them into market-ready products.

Other evidence supporting a moderate impact on attractiveness is that close to half (49%) of VPRs said they thought ICP funding had contributed to increasing the number of researchers in Canadian institutions to a large (33%) or moderate (16%) extent. On the other hand, a smaller proportion (31%) indicated that ICP had significantly helped increase the number of researchers from outside of Canada attracted to their institution. Rather, nearly half (48%) felt that ICP had no to little impact in this regard.

The 2009 Program Evaluation did not find direct evidence of the contribution of ICP to the attractiveness of Canadian research environments between 2003 and 2008.[13]

[13] See p. 59, exhibit 5.4

The VPRs surveyed for that evaluation reported improvements in the capacity of their institution to attract world-class researchers as well as an increase in the number of active researchers over the five year period (2003-2008); however, they were not asked to identify the contribution of ICP to the trends.

Q5 To what extent is ICP cost-efficient?

Summary of Findings
The findings from the evaluation show that ICP is extremely cost-efficient, and has become increasingly so since it began. Administering the program costs 18 cents for each $100 of ICP funds granted. This is a lower cost relative to ICP's closest comparable program, SSHRC's Institutional Grants. The credit calculation process (undertaken by program personnel at each of the granting agencies) represents a very small proportion of ICP's total administrative cost (including costs incurred by the Chairs Secretariat to administer the program and program personnel to provide funding data) and appears to be fairly efficient. However, the evaluation found that the credit calculation itself is becoming more complex due to the changing profile of the types of research being funded (such as more collaborative research across institutions and with affiliates and the changing nature of the research itself).

The cost efficiency analysis conducted as part of this evaluation found that ICP is very cost-efficient. This finding is supported by interviews with key informants from the Steering Committee and IPRC representatives. An analysis of the full lifespan of ICP reveals that the program has become increasingly cost efficient since its beginning in 2003-04.

The goal of the cost-efficiency analysis portion of this evaluation was to assess the operational efficiency of ICP in terms of how inputs are being used and converted into outputs that support the achievement of intended program outcomes. Since cost-efficiency analysis is a comparative exercise, the evaluation team sought another program as similar as possible as ICP to use as a benchmark. Due to the unique nature of ICP however, it was not possible to find an exact comparable program among the tri-agency programs with which to compare. Therefore, although it is a much smaller program compared to ICP, SSHRC's Institutional Grants (SIG) funding opportunity was selected because, akin to ICP, it utilizes a prescribed formula to calculate grant amounts. SIG is an institutional program designed to help eligible Canadian postsecondary institutions fund small scale research activities by their faculty in the social sciences and humanities.

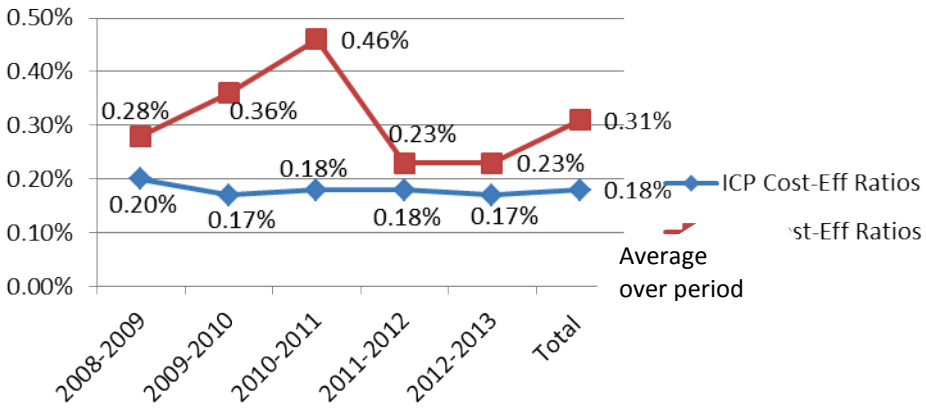
The evaluation found that ICP is slightly more cost-efficient than SIG. On average over the 2008-09 to 2012-13 period, SIG cost 31 cents per $100 SIG funds granted, or

0.31% Meanwhile, over the same period, ICP cost on average 18 cents per $100 ICP funds granted, or 0.18%. A very low administrative cost has been a characteristic of ICP since its beginning in 2003-04. The 2009 evaluation of ICP found that the average cost to administer the program from 2003-04 to 2006-07 was 0.3%. Thus, ICP has become more cost-efficient over its 10 year lifespan.

To determine the relative cost-efficiency of ICP and SIG, the ratio of the administrative costs relative to the grant expenditures and to the total expenditures (the sum of the administrative costs and grants expenditures) was compared for each ICP and SIG. Following this, the cost ratios of ICP were compared against SIG. Exhibit 3.6 below depicts the trends in cost-efficiency ratios (total administrative costs as a percentage of total program costs) from 2008-09 to 2012-13 for each program.

Exhbit 3.6: Trends in Cost-efficiency Ratios by Program (2008-09 to 2012-13)

(total administrative costs as a percentage of total program costs)



*SIG financial data was provided by the NSERC-SSHRC Finance Division

A particular area of interest in terms of program efficiency that was explored during this evaluation was ICP's credit calculation process[14]. Based on data collected from key informants in the IDWG, the ICP credit calculation appears to be fairly efficient. Recall that the credit calculation is not conducted by the Chairs Secretariat, but rather by program personnel at each of the three granting agencies. Thus, costs associated with the credit calculation are over and above the ICP administrative costs incurred by the Chairs Secretariat. Table 3.3 below shows the details on the personnel involved in the calculation

[14] ICP credit calculation consists of activities necessary for an Interagency Data Working Group (IDWG) member to provide the ICP Secretariat with the required data for the calculation of ICP grants every year. These activities include participation in preparatory meetings, extraction of data, validation of data, etc. The membership of the IDWG includes the data analysts and their immediate supervisors from each of the funding agencies and the Networks of Centres of Excellence (NCE) Secretariat.

process for 2013-2014[15] as well as time-commitment estimates for each. A monetary estimate of the cost of the process was calculated based on personnel salaries. Based on this, the estimated total cost of the ICP credit calculation process for 2013-2014 is $53,385, which constitutes approximately 0.02% of ICP's overall expenditures of $332,938,719 for 2012-13, and 9.69% of ICP's total administrative costs of $551,108 for this same year.

Table 3.3: Estimates of Time Spent on the Credit Calculation by Organization, Position and Classification for 2013-2014

Organization/ Position	Unknown GR (hrs/yr)	GR-04 (hrs/yr)	GR-06 (hrs/yr)	GR-08 (hrs/yr)	GR-10 (hrs/yr)	Grand Total (hrs/yr)	Total Estimated Cost ($)**
Organization 1	**120**		**70**		**9**	**199**	**$32,723**
Consultant	120*					120	$30,000
Data Manager					9	9	$449
Staff			70			70	$2,274
Organization 2		**158**		**246**		**404**	**$13,769**
Data Manager				246		246	$9,840
Staff		158				158	$4,138
Organization 3			**100**	**10**		**110**	**$3,649**
Data Manager				10		10	$400
Staff			100			100	$3,249
Organization 4			**95.25**	**3.75**		**99**	**$3,244**
Data Manager				3.75		3.75	$150
Staff			95.25			95.25	$3,095
Grand Total	**120**	**158**	**265.25**	**259.75**	**9**	**812**	**$53,385**

*As of 2012-13, one organization has outsourced the preparation the credit calculations to an external consultant.

** Estimates of the cost of the credit calculation across the organizations were calculated, with respect to available data. SSHRC's rates set out in the Collective Agreement (rates in effect as April 1, 2010) were used. An average amount of salary categories was calculated for each group, followed by inference of the average amount per hour.

Key informants from the Steering Committee and IPRC were interviewed about their perceptions regarding the efficiency of ICP delivery. All key informants that voiced their opinion on the issue indicated that overall ICP is being delivered efficiently, with all identifying the funding formula as the key mechanism contributing to this success.

Half of IPRC respondents questioned the costs associated with the credit calculation process since they saw it as a fair amount of work for the tri-agencies. While none

[15] The evaluation team asked IDWG members to provide time estimates for 2013-14 instead of 2012-13 in order to make sure that the most accurate possible estimates would be provided.

indicated alarm or concern about it, a few suggested that it could be done less frequently (e.g., every 2 years rather than annually). When consulted about the credit calculation estimates, most IDWG key informants indicated that the credit calculation process is efficient to a great extent and one indicated that is efficient to some extent. In terms of opportunities for improvement, half of the IDWG members indicated that clearer procedures and processes would be useful and some IDWG members suggested the process could be simplified. Currently, the grant amounts are split with co-applicants, which requires a time-consuming process for allocating credits to the correct institutions (based on the co-applicants' affiliations). All lines of evidence support that the research funding environment is growing in complexity due to increased collaborative research (across institutions, with affiliates and with the private sector) and the nature of the research being conducted (and supports required).

The credit calculation process has resulted in errors in the past, and some required grant re-calculation (with implications on ICP staff resources). Interviewees mentioned that such errors could translate into negative perceptions, mistrust, and frustration on the part of institutions.

4.0 Conclusions and Recommendations

The evaluation found that there is a continuing need for the program. Many contextual shifts have occurred that put pressure on the indirect cost of research. Institutions are addressing the context changes by using money from their operating budget to offset the difference between what is supported by ICP and actual costs.

The evaluation also found that while there is no clear evidence of the actual amount of the indirect cost of federal grant-supported research, there is some evidence to suggest it is in the 40% to 60% range. What cannot be disputed, however, is that the proportion of direct grants from the tri-agency to ICP funding has been decreasing over time, particularly for large and research-intensive institutions. Moreover, there is evidence that the indirect costs of federal grant-supported research have been increasing over time (due to contextual shifts reported in most lines of evidence). Further information would be required from institutions if ICP wishes to further explore the indirect costs associated with federal grant-supported research.

In the absence of ICP, funding would be redirected from other areas to cover those indirect costs that cannot be easily cut or reduced. As well, VPRs reported that they would likely limit the amount of research their institution does and/or limit the type of research that is done. The downstream impact would be that less research would be conducted in Canada.

The evaluation found that the program is consistent with federal and tri-agency priorities and is aligned with federal roles/ responsibilities

Recommendation 1: It is recommended that the program be continued. There is a clear demonstrable need for the program. Offsetting a portion of the indirect costs incurred as a result of direct federal research funding is consistent with government/ tri-agency priorities and is an appropriate role for the federal government.

In terms of the achievement of outcomes, the evaluation found that the program is meeting its intended outcomes. In particular, there is strong evidence that ICP has been able to make a contribution towards:

- The quality of facilities and the quality and availability of research resources;

- The efficiency and effectiveness of research support (including management and administration, knowledge mobilization, intellectual property); and
- Institutions' ability to meet regulatory requirements.

The evaluation also found that the program is meeting its intended longer-term outcomes as well. There is strong evidence that ICP has contributed to helping institutions and researchers optimize the direct federal research money they receive. As well, there is some evidence that ICP has enabled institutions to compete with other Canadian and international institutions for world-class researchers (although the contribution of this outcome to ICP is less strong). What was ably demonstrated is that ICP funding helps institutions to meet the minimum expectations of researchers and, in some cases, exceed them.

While collecting data for the evaluation and in the analysis of the evidence, the evaluators encountered three key challenges. First, it was observed that two of the final outcomes presented in the logic model (related to regulatory compliance and knowledge mobilization/ commercialization/intellectual property (IP)) are very similar and overlap with the associated intermediate outcomes. Moreover, it was not obvious how these two outcomes would be achieved as a result of the three intermediate outcomes related to facilities, research resources and management and administration. Thus, since the other two final outcomes (optimization of federal direct research funding and increased attractiveness of Canadian institutions) are more overarching and can better be expected to be achieved as a result of any of the intermediate outcomes, the evaluators focused on presenting evidence against only those two final outcomes.

Second, the evaluators found that the concept that ICP funding as causing incremental impact is problematic to demonstrate. As an illustration, while the analysis of CARL data was able to describe important trends relevant to the research resource area, they do not tell the ICP performance story. As well the analysis of the data do not allow for the assessment of the state of the overall research resources environment in the broad post-secondary education sector. It is the conclusion of the evaluators that it is reasonable to expect ICP to help institutions maintain capacity in eligible expenditure areas and even to make some contribution to improvements in these areas. However, changes (improvement/increases, for example) cannot be directly attributed to ICP.

Recommendation 2: It is recommended that the performance measurement strategy be updated to revisit the theory of change in order to better reflect that ICP funding

contributes to improvements/ increases in the eligible areas of expenditure (rather than being directly responsible for these improvement/increases).

The third challenge was that the data collection for the evaluation found that smaller institutions (that have received less ICP funding overall) were better able to provide concrete examples(through their outcomes reports and case studies) of where ICP was spent and thus the impact of ICP. This is likely because larger institutions typically add ICP funds to their overall operating budget and spend it wherever operating dollars are needed (in eligible expenditure areas). Thus, only a proportion of indirect costs are supported by ICP and it is difficult to point to any one expenditure as being supported by ICP alone.

Recommendation 3: It is recommended that the program identify a small number of reasonable and achievable key indicators that could be used to for ongoing program monitoring and to effectively support the needs of program evaluation in assessing the performance of the program. This should result in a revised outcome reporting structure. A new reporting structure for institutions would include more specificity regarding how ICP funding decisions are made and where ICP funding is spent and have less narrative reporting burden (e.g., one example of contribution in each expenditure area could be sought).

In terms of efficiency, the evaluation found that the program is extremely cost-efficient. On its own and in comparison to a similar program administered by SSHRC, the cost of administering the program is very low. While there are some areas where operational efficiencies could be further improved (e.g., simplifying the credit calculation, conducting the credit calculation less frequently), there is no compelling evidence that these must be undertaken although they are potential areas for management consideration to mitigate the risk they present. In particular, the evaluation found that the credit calculation process has been growing in complexity due to the increasingly complex research funding environment (including more and complex collaborative research and the increasingly complex nature of some research). While rare, errors have occurred in the past which, if not caught in time, would result in negative perceptions, mistrust and frustration on the part of institutions.

Appendix A – ICP Logic Model Narrative

Whether the grant pays for the maintenance of libraries, laboratories or research networking spaces, or for the technical support required for an institution's website or library computer system, the overall goal of the Indirect Costs Program is to help ensure Canada's research institutions remain top-notch.

Activities

The main activities of the program aim at providing grants to the institutions. These activities comprise the collection of funding data from the tri-agency, the calculation of the grants, validation of eligibility of institutions, the management of the awards, and the monitoring and evaluation of the program results. The Secretariat of the Canada Research Chairs program is responsible for these activities while the NSERC-SSHRC Evaluation Division, in collaboration with CIHR evaluation unit, is responsible for the evaluation of ICP.

Outputs

The distribution of funds is achieved by using a progressive funding formula. Table A.1 shows the ICP funding formula using the average revenues from research grants received from CIHR, NSERC or SSHRC. Publicly available data is used to determine allocations. For each fiscal year, the allocation is based on the amount of research funding awarded to eligible institutions by the three granting agencies, averaged over the three most recent years for which data is available.

Table A.1: Indirect Costs Program funding formula

Average revenues from CIHR, NSERC and SSHRC research grants	Funding for indirect costs[16]
First $100,000	80%
Next $900,000	50%
Next $6 million	40%
Balance	Percentage calculated annually, based on the total amount available; approximately 20%.

Eligible institutions are required to submit an application form every year requesting consideration for an indirect costs grant. Institutions are required to outline how they plan to allocate the grant to any of the five categories.

[16] In the event that Parliament changes the amount of funds available for the Indirect Costs Program, the program's Steering Committee reserves the right to change the value of its grants.

The application form is to be accompanied by a statement confirming whether or not the institution has affiliated institutions and research hospitals. Institutions that meet the eligibility criteria and are affiliated with one or more research hospitals are required to demonstrate that they have a formal agreement with their affiliated hospitals, dealing with the distribution of the indirect costs grant between the different responsibility centres.

The Secretariat reviews these applications and ensures that they conform to the policies and guidelines of the program. It provides institutions with advice and guidance in order to ensure the effective use of funds as outlined in the program's terms and conditions, policies and guidelines.

Outcomes

Immediate Outcomes

In the short-term, the funds will be invested to strengthen services aiming to:

- The provision of research facilities; including the operation and maintenance of these facilities, and the technical support of equipment.
- The provision of research resources, including support for multidisciplinary research and international collaboration. This includes the provision of library infrastructure and services, archiving services, telecommunications services, data computing infrastructure and services, and data storage facilities.
- Enhance the ability to meet regulatory requirements related to international accreditation standards in research. This includes standards that govern ethical treatment of human subjects in medical and social sciences research; animal care; the handling of hazardous materials, and environmental protection.
- The management and administration of the research enterprise. This includes research planning and promotion, public relations, human resources management, financial services and departmental services in support of the institution's research activities.
- The transfer of knowledge-commercialization and the management of intellectual property generated by research activities. This includes enhanced capacity to facilitate the disclosure of research discoveries and mechanisms to transfer the knowledge for commercialisation.

Intermediate Outcomes

The program will contribute to enhancing outcomes in the five areas of the indirect costs: research facilities; research resources; management and administration of the research enterprise; complying with regulatory requirements; and knowledge mobilization, commercialization and the management of intellectual property. Incremental benefits of the Indirect Costs support are expected at the intermediate level.

Final Outcomes

The Indirect Costs program, in conjunction with the other sources of direct and indirect support to research, is expected to contribute to:

- Attractiveness of Canadian research environments in enhancing
  - Capacity to recruit high quality researchers
  - Capacity to retain high quality researchers
  - Capacity to attract other sources of infrastructure support: foundations, endowments, private sector
- Compliance with regulatory requirements, particularly in the areas of animal care, human subjects research ethics, and radiation and biohazard
- Transfer of knowledge and commercialization of results
  - Rates of transfer and commercialization
  - Spin-off companies, patent applications and licences

In the long term, the program is expected to contribute to this strategic outcome: "Canada has the institutional capacity to enable research and research-related activities in social sciences and humanities, natural sciences and engineering, and health."

The indirect costs program is instrumental to maintaining the health of the research enterprise in Canada. The program provides funding to universities to help them defray the costs associated with activities that support the research enterprise at each institution, but are not attributable to a specific research project and are not covered by direct research funding provided by the three agencies. Supporting these activities contributes to creating a healthy and sustainable research environment, one which fosters the optimal use of direct research funding, increases the attractiveness of the Canadian research environment, and maximizes the impact of research.

Appendix B – Evaluation Matrix

Issues and evaluation question	Indicator	Data Sources and Methods	Baseline Data
Relevance			
1. To what extent does the program continues to address a demonstrable need and is responsive to the needs of Canadians Institutions	Description and assessment of the change in the university research context (costs, trends in funding, expenditures, priorities, etc.) in last ten years	Interviews • ICP Secretariat • Members of the ICP Steering Committee • ICP stakeholders (AUCC, CAURA, CARL, CAUBO, U15, ACCRU, experts) • Provincial representatives for post-secondary education Survey • University VPs of Research (VPRs) Document Review • Audit reports • International comparison • Previous evaluation reports • Department/agency reports on changes to funding for indirect costs from all sources File Review • Progress, financial and outcomes reports (trends in expenditures), site visit reports Data review • Program statistics (e.g. amounts of funding from tri-councils • University budgets (sources of funding, expenditures by type) Case studies, including interviews with a sample of: • VPRs, Chief Financial Officers (CFOs), Research Grants Officers (RGOs), Deans, researchers	2005 evaluation report 2009 evaluation report
	Description of the range of strategies employed by funded institutions to determine how to	Survey • VPRs	

Issues and evaluation question	Indicator	Data Sources and Methods	Baseline Data
	allocate ICP funding by eligible area and how to invest ICP funds within each eligible area	File Review • Progress and outcomes reports • Site visit reports Case studies, including interviews with a sample of: • VPRs, CFOs, RGOs, Deans, researchers	
	Importance of ICP for funding indirect costs of universities	Interviews • Stakeholders Survey • VPRs Document Review • Reports (e.g., AUCC, Statistics Canada, etc.) • Previous evaluation reports File Review • Progress and outcomes reports regarding pressures, priorities, gaps and ability to meet needs • Site visit reports Case studies, including interviews with a sample of: • VPRs, CFOs, RGOs, Deans, researchers	
	Trends in other sources of funding in Canada for indirect costs of research (% of total represented by ICP)	Data review • University budgets (sources of funding, expenditures by source of funding, if available)	2005 evaluation report 2009 evaluation report
	Importance of indirect costs in researchers' decision to apply for grants outside of the federal granting agencies	Survey • VPRs Case studies, including interviews with a sample of: • Researchers	
2. To what extent are Indirect Costs program objectives consistent with the federal government a priorities? 2a To what extent are the Indirect	Degree of alignment with federal priorities as articulated in recent documents or communications	Interviews • Steering Committee members Document Review • Legislation, Speeches from the Throne, Budget speeches,	2009 evaluation report

Issues and evaluation question	Indicator	Data Sources and Methods	Baseline Data
Costs program objectives consistent with Tri-Agencies' strategic outcomes?		Ministerial announcements and speeches, policy documents, etc.	
	Degree of alignment with strategic outcomes of granting agencies	Interviews • Steering Committee members Document Review • Legislation, policy documents, Program Activity Architecture (PAA), RPP and DPR, etc.	2009 evaluation report
3. Is there a role or responsibility for the federal government in delivering ICP?	Assessment of the federal government's and granting agencies' role and responsibilities in delivering the program Evidence that ICP is consistent with federal roles and responsibilities.	Interviews • Steering Committee members Document Review • Legislation, policy documents, etc.	2009 evaluation report
Performance (effectiveness, efficiency and economy)			
4. What contribution has ICP funding made to the achievement of outcomes?	Total and proportion of ICP funding invested in the five eligible areas of the program and trends over time (achievement of immediate outcomes)	Document Review • Previous evaluation reports File Review • Progress, financial and outcomes reports • Site visit reports	2005 evaluation report 2009 evaluation report
	Examples of how ICP funding contributes (in relation to other sources of funding) to each intermediate outcome: • Appropriate and well-equipped facilities (e.g., areas of expenditure/priorities with rationale, necessary equipment is present and in working order, researchers indicate facilities meet their needs) • Relevant research resources (e.g., areas of expenditure /priorities with rationale, evidence of appropriate and sufficient information sources, including library resources,	File Review • Progress and outcomes reports • Site visit reports Case studies, including interviews with a sample of: • VPRs, CFOs, RGOs, Deans, researchers	2005 evaluation report 2009 evaluation report CARL data (online)

Issues and evaluation question	Indicator	Data Sources and Methods	Baseline Data
	well-equipped library, users indicate resources meet their needs, • Improved ability to meet regulatory requirements (e.g., areas of expenditure/priorities with rationale, evidence of support for REB (including training for REB members), evidence of training for research personnel to meet regulatory requirements, evidence of accreditations obtained/maintained) • Efficient and effective management of the research enterprise (e.g., areas of expenditure/priorities with rationale, evidence of institutional support for the completion of grant applications/research proposals, research offices have necessary software/hardware to track applications, success and feedback, evidence of processes and support for audits, support for publications describing research undertaken/other PR activities, support to build international collaborations/ partnerships) • Efficient and effective knowledge mobilization, commercialization and management of intellectual property (IP) (e.g., areas of expenditure/priorities with		

Issues and evaluation question	Indicator	Data Sources and Methods	Baseline Data
	rationale, evidence of a technology transfer office (or similar), evidence of policy/ support for patent applications, technology licensing, evidence of policy or processes for agreements and partnerships with industry, evidence of processes and/or programs to support the development of incubators or spin-off companies, evidence of IP policies in place, evidence of support for outreach activities)		
	Evidence that ICP funding has contributed to optimize the use of federal direct research funding as measured by trends in the impact of indirect cost support (relative to other influencers) on: amount and value of research, number of researchers, perceived competitiveness of institutions on world stage, perceptions regarding quality of research, satisfaction with research support (final outcome)	Survey • VPRs Document Review • Previous evaluation reports • University annual reports • International university rankings File Review • Progress and outcomes reports • Site visit reports Case studies, including interviews with a sample of: • VPRs, CFOs, RGOs, Deans, researchers	2005 evaluation report 2009 evaluation report
	Evidence that ICP funding has contributed to increasing the attractiveness of Canadian research environments as measured by trends in the perceived impact of indirect cost support (relative to other influencers) on: number of researchers in Canada, number of researchers attracted from outside Canada (final outcome)	Survey • VPRs Document Review • Previous evaluation reports • University annual reports File Review • Progress and outcomes reports	2005 evaluation report 2009 evaluation report

Issues and evaluation question	Indicator	Data Sources and Methods	Baseline Data
		• Site visit reports Case studies, including interviews with a sample of: • VPRs, CFOs, RGOs, Deans, researchers	
	Evidence that ICP funding has contributed to improving the compliance with regulatory requirements as measured by trends in compliance rates (where data is available) and perceived impact of indirect costs support (relative to other influencers) (final outcome)	Survey • VPRs Document Review • Previous evaluation reports • University annual reports File Review • Progress and outcomes reports • Site visit reports Case studies, including interviews with a sample of: • VPRs, CFOs, RGOs, Deans, researchers	2005 evaluation report 2009 evaluation report
	Evidence that ICP funding has contributed to enhance the transfer of knowledge and commercialization of results as measured by trends in the perceived impact of indirect cost support (relative to other influencers) on: patent applications and patents granted, licence agreements, disclosures and start-up companies (final outcome)	Survey • VPRs Document Review • Previous evaluation reports • University annual reports File Review • Progress and outcomes reports • Site visit reports Case studies, including interviews with a sample of: • VPRs, CFOs, RGOs, Deans, researchers, representatives from university technology transfer offices/ industry-university liaison offices (TTOs/ILOs)	2005 evaluation report 2009 evaluation report
5. To what extent is ICP cost-efficient?	Analysis of administrative costs to run the program compared to costs to run other tri-agency programs (including costs related to data gathering incurred by the Secretariat	Administrative data review • Costs to operate the program, including data gathering activities across all of the tri-agencies • Costs to operate other tri-agency programs	2009 evaluation report

Issues and evaluation question	Indicator	Data Sources and Methods	Baseline Data
	and tri-agencies)		
	Assessment of the efficiency and economy of the program Potential changes/improvements to the program to improve effectiveness, efficiency and/or economy	Interviews • ICP Secretariat • Members of the IDWG • Members of the IPRC • Members of the ICP Steering Committee	2005 evaluation report 2009 evaluation report
	Comparison of the various ICP models for allocating funding at universities (e.g., criteria, formulae) and identification of best practices	Survey • VPRs File Review • Progress and outcomes reports • Site visit reports Case studies, including interviews with a sample of: • VPRs, CFOs, RGOs, Deans, researchers	