

**Joint Results-based Management and Accountability Framework
and
Risk-Based Audit Framework
for the
Class Grant Networks of Centres of Excellence Program
(NCE Program)**

Prepared by:
The Networks of Centres of Excellence Secretariat

August 2008

Table of Contents

1	Introduction	1
1.1	Background	1
1.2	Level of Integration	1
2	Program Profile	3
2.1	Context	3
2.2	Goal and Objectives of the NCE Program.....	6
2.3	Key Stakeholders and Beneficiaries	6
2.4	Resources	7
3	Expected Results	9
3.1	Key Risk Areas	9
3.2	Logic Model	10
3.3	Accountabilities.....	15
3.4	Applications and Progress Reports	17
3.5	Reporting Requirements and Review Process.....	17
4	Risk Assessment and Management Summary.....	17
4.1	Risk Management Process.....	17
4.2	Overall Risk Assessment	17
5	Monitoring and Evaluation Plan	17
5.1	Program Monitoring	17
5.2	Financial Monitoring	17
5.3	Performance and Risk Monitoring.....	17
5.4	Performance Reporting	17
5.5	Evaluation Plan.....	17
5.6	Reporting Strategy	17
5.7	Risk Management Plan	17
5.8	Internal Audit	17
5.9	Audit Reporting	17

1 Introduction

1.1 Background

The class grants Networks of Centres of Excellence (NCE) program is a federal program administered jointly by the Natural Sciences and Engineering Research Council, the Canadian Institutes of Health Research, and the Social Sciences and Humanities Research Council in partnership with Industry Canada.

The NCE Program was created in 1989 with a goal to mobilize Canada's research talent in the academic, private and public sectors and apply it to the task of developing the economy and improving the quality of life of Canadians. This goal is consistent with the framework to guide Canada's science and technology policy: Mobilizing Science and Technology to Canada's Advantage.

The NCE Program goal is accomplished by investing in research networks that are unique partnerships among universities, private and public sectors and not-for-profit organizations. These nation-wide, multidisciplinary and multisectoral partnerships connect excellent research with private sector know-how and strategic investment. NCEs put in place well-defined strategies to transfer knowledge to users – ensuring that discoveries and technological advances are turned into social and economic benefits for all Canadians. Since the creation of the program, 40 networks have been funded by the NCE program.

1.2 Level of Integration

This integrated Results-based Management and Accountability Framework (RMAF) and Risk-Based Audit Framework (RBAF) provides results-based management and accountability information for all the NCE program's activities. It also provides an assessment of risk and mitigation strategies for managing key risk areas. The RMAF and RBAF are highly integrated. The results logic and risk assessment were coordinated to enable results and risk to be managed as one process. For example, results measurement and risk management strategies have been synchronized to draw on, where possible, common measures and review processes.

The sections included in this document are as follows:

- **Section 2 – Program Profile.** This section presents a detailed description of the program objectives and rationale. It also outlines the resources allocated to the NCE program and the groups that it targets through its design.
- **Section 3 – Expected Results.** This section presents a description of the expected results and delivery approach for the NCE program's activities.
- **Section 4 – Risk Assessment and Management Summary.** This section presents a description of the risk assessment and management strategies in place for the NCE program.

- **Section 5 – Monitoring, Evaluation and Auditing.** This section contains detailed information on the indicators that will be used to measure the success of the NCE program’s activities and how they can be measured and reported upon on an ongoing basis. It presents a strategy for evaluating program activities’ relevance, success and cost-effectiveness and a risk management plan. A discussion of internal audit is also presented.

It should be noted that this RMAF/RBAF is intended to be a living document and will be revisited on an ongoing basis and revised as required to reflect, for example, changes to the program, improvements in indicators, changes in performance measurement activities, etc.

2 Program Profile

2.1 Context

Science and technology (S&T) play a key role helping Canadians to address pressing societal challenges. S&T also supports business innovation, enabling economies to improve their long-term productivity and competitiveness, and in so doing supporting a higher standard of living and quality of life. However, Canadian private sector investment in S&T and new technology, and demand for highly skilled workers is low compared to other OECD countries. This is contributing to weak productivity growth in relation to the United States, Canada's most important trading partner.

Mobilizing Science and Technology to Canada's Advantage, the Government of Canada's S&T Strategy, sets out a multi-year policy framework to improve Canada's long-term competitiveness and quality of life by fostering three inter-related S&T-based advantages. The Strategy encourages an Entrepreneurial Advantage to strengthen private-sector commitment to R&D and innovation vital to productivity and competitiveness, a Knowledge Advantage to ensure Canadian universities and colleges sustain their world-class research excellence, and a People Advantage so that Canada has access to the highly-skilled researchers and innovators it needs.

When the NCE program was initiated, it was somewhat controversial. There were two central features of the program: (1) the "distributed network model"; and (2) the focus on generating practical applications from fundamental research programs, working in concert with industry partners. At the time, it was not known how much value these features would add, or indeed if they would work as intended. The program was conceived as being experimental in nature, and individual networks took widely varied approaches to network management, research collaboration, and interactions with industry. There were virtually no other significant research programs in existence anywhere in the world that were similar to NCE. Since that time, a number of programs modelled on the NCE program have been created internationally and within Canada, and those once-controversial aspects are now taken almost for granted.

The most recent evaluation of the NCE Program conducted in 2007 supports the rationale for the continuation of the NCE Program. It reinforces the importance of the NCE Program as a major instrument for the Granting Agencies and Industry Canada to support large scale collaborative research aimed at solving important problems for Canadians¹. Furthermore, Budget 2007 and the subsequent federal S&T Strategy confirmed this by assigning three new programs to the tri-agency secretariat, namely Centres of Excellence in Commercialisation and Research, Business-Led NCEs and Industrial R&D Internship programs.

¹ *Evaluation of the Networks of Centres of Excellence Program, Evaluation Report, October 2007*

In relation with its logic model, evidence was provided that the program has:

- ❑ *“increased networking among partners and collaboration among researchers, particularly at a multi-disciplinary level;*
- ❑ *produced leading-edge research findings relevant to the needs of Canadian stakeholders; results from NCE-supported research has been used by industry as well as by governments;*
- ❑ *successfully emphasized nation-wide, multidisciplinary and multisectoral research partnerships between universities, industry, the health sector, government and non-government organizations;*
- ❑ *offered advanced training featuring components not found in other settings; and*
- ❑ *supported the transfer of knowledge to the user communities, and commercialization of research findings in particular, beyond what would have happened without the program.”*

While the evaluation noted that it is difficult to provide a quantitative assessment of the NCE Program contribution to Canadian productivity, economic growth, and improved quality of life for Canadians, many of the research findings, industrial results and public policy improvements associated with the NCE networks should lead to such long-term outcomes. The evaluation report concludes that the program produces significant incremental benefits to Canada and Canadians, and that it is managed in a cost-effective and efficient manner.

In 2007-2008 15 NCEs and five NCE-New Initiative (NCE-NIs) networks received funding. The table below indicates the span of research covered by the 15 NCEs:

Advanced Technologies
Canadian Institute for Photonic Innovations - CIPI (1999-2009) Université Laval, Québec, Québec
Geomatics for Informed Decisions Network - GEOIDE (1998-2009) Université Laval, Québec, Québec
Mathematics of Information Technology and Complex Systems - Mitacs (1998-2009) Simon Fraser University, Burnaby, British Columbia
Engineering and Manufacturing
AUTO21- The Automobile of the 21st Century (2000-20011) University of Windsor, Windsor, Ontario
Intelligent Sensing for Innovative Structures - ISIS Canada (1995-2009) University of Manitoba, Winnipeg, Manitoba
Health, Human Development and Biotechnology
Advanced Foods and Materials Network - AFMNet (2003-2010) University of Guelph, Guelph, Ontario
Allergy, Genes and Environment Network - AllerGen (2004-2009) McMaster University, Hamilton, Ontario
Canadian Arthritis Network - CAN (1998-2009) Mount Sinai Hospital, Toronto, Ontario
Canadian Language and Literacy Research Network (2000-2008) University of Western Ontario, London, Ontario
Canadian Stroke Network - CSN (1999-2010)

University of Ottawa, Ottawa, Ontario
PrioNet Canada (2005-2009) University of British Columbia, Vancouver, British Columbia Vancouver Coastal Health Research Institute, Vancouver, British Columbia
Stem Cell Network - SCN (2000-2011) University of Ottawa, Ottawa, Ontario
Natural Resources and Environment
ArcticNet (2003-2010) Université Laval, Québec, Québec
Canadian Water Network - CWN (2000-2011) University of Waterloo, Waterloo, Ontario
Sustainable Forest Management Network - SFM (1995-2009) University of Alberta, Edmonton, Alberta

The Government of Canada which funds the NCE program has expressed high confidence in the NCE program. In response to the bovine spongiform encephalopathy (BSE) crisis – “Mad cow disease” – the 2004 federal Budget identified additional funding of \$5 million a year for seven years, starting in 2005-2006 to support the creation of a new NCE for research on the topic. A targeted competition was held in 2005, resulting in the creation of PrioNet.

NCE-New Initiatives (NCE-NI) pilot program was established to support networking among well-established researchers or research teams to encourage them to develop new partnerships with receptor communities. NCE-NI funding support networking activities among researchers whose work seeks ultimately to improve the well-being of Canadians, be it social, health-related and/or economic. The funding is not intended to support research as it is expected that the teams will already have existing research funds. The five NCE-NIs funded as a result of the 2005 pilot competition are presented in the table below.

NCE-New Initiatives (NCE-NIs)
Canadian Obesity Network (2005- 209) McMaster University, Hamilton Ontario
National Initiative for the Care of the Elderly – NICE (2005-2009) University of Toronto, Toronto, Ontario
Canadian Design Research Network (2005-2008) Simon Fraser University
Emerging Dynamic Global Economies – EDGE (2005-2008) University of Ottawa; Ottawa, Ontario
Promoting Relationships and Eliminating Violence Network - PREVNet (2005-2009) Queen’s University, Kingston Ontario

2.2 Goal and Objectives of the NCE Program

The goal of the NCE program is to mobilize Canada's research talent in the academic, private and public sectors and apply it to the task of developing the economy and improving the quality of life of Canadians.

This NCE program goal is accomplished by investing in national research networks that meet the following objectives:

- Stimulate internationally competitive, leading-edge fundamental and applied research in areas critical to Canadian economic and social development;
- Develop and retain world-class researchers and research translation capabilities in areas essential to Canada's productivity and economic growth;
- Create nation-wide and international research partnerships that bring together the key individuals and organizations needed to generate and implement multifaceted solutions to complex Canadian challenges
- Accelerate the exchange of research results within the network and the use of this knowledge within Canada to produce economic and social benefits.
- Increase Canada's international visibility and reputation by attracting world-class collaborations and developing partnerships with international organization counterparts when applicable.

These objectives are closely linked to the strategic outcomes identified in the Program Activity Architecture (PAA) of all three granting agencies. Each agency has an outcome related to the training and support of researchers, an outcome related to conducting high-quality research, and an outcome related to the transfer of knowledge generated through research activities.

2.3 Key Stakeholders and Beneficiaries

The main deliverers of the program include the three granting agencies: the Natural Sciences and Engineering Research Council (NSERC), the Canadian Institutes of Health Research (CIHR) and the Social Sciences and Humanities Research Council (SSHRC) as well as Industry Canada. Organizations eligible to receive funds are universities, affiliated hospitals and research institutes, post-secondary institutions with a research mandate, and industry consortia. Researchers and organizations that receive NCE funds must meet the general eligibility requirements of one of the three federal granting agencies partnering in the program. Academic researchers as well as public and private sector partners are significant players to ensure achievement of the results.

2.3.1 Primary targets

The primary targets of the NCE program are the recipient organizations and researchers that the deliverers aim to mobilize in order to achieve the NCE program's expected results; namely, universities, affiliated hospitals and research institutes, post-secondary institutions with a research mandate, and industry consortia.

2.3.2 Other stakeholders

Organizations from the private, public and not-for-profit sectors within the areas covered by the networks are important stakeholders benefiting from the research results arising from the networks. In many instances, they are closely involved in commercializing new products and services. Globally, the NCE program bears the potential for impact on the development of entirely new industrial sectors in Canada. The Canadian public can also be considered as a stakeholder since the results are already known as having important impacts on the economy and on the quality of life of Canadians. Other program stakeholders include collaborators, consultants, clients, suppliers, and various levels of government. Parliament is another important stakeholder given the significant role played by the NCE program within the S&T Strategy as well as within the various activities of the Industry Canada portfolio.

2.4 Resources

2.4.1 Program Resources

The NCE program, recommended initially by the National Advisory Board on Science and Technology (NABST) in 1987, was announced in 1988 and provided with funding for five years. In 1993, funding was provided for an additional five years. In February 1997, the NCE program was made permanent by the Government of Canada with a commitment of \$47.4 million in annual funding starting in 1999-2000. The 1999 Budget provided an additional \$30 million of new funding for the NCE program starting in 1999-2000 bringing the NCE annual budget to \$77.4 million. The 2004 Budget identified an additional \$5 million a year from 2005-2006 to 2011-12, to support the creation of a new NCE network for research on bovine spongiform encephalopathy (BSE) and other transmissible spongiform encephalopathies (TSE). The NCE program allocation is detailed in the table below:

Figure 2.1 NCE Program Operating Budget (2008-2009 to 2012-2013)

Networks of Centres of Excellence (NCE) (millions of dollars)						
	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	Totals
TOTAL NCE	82.4	82.4	82.4	82.4	77.4	404.0

2.4.2 Expenditures for Monitoring, Evaluation and Auditing

The Secretariat uses NSERC's audit and evaluation functions. NSERC receives annual appropriations for the programs administered by the NCE Secretariat. The costs incurred in developing and implementing the accountability/evaluation framework will be found within the operating budget. This program is subject to internal audit by NSERC's Internal Audit function, which has a budget of \$223,740 for 2007-2008 and will increase to approximately \$350,000 for future years. A specific evaluation budget of \$250,000 has been set aside for the NCE program. Funding for ongoing performance measurement activities will be found from within the NCE directorate operating budget as required.

3 Expected Results

The goal of the NCE Program is to mobilize Canada's research talent in the academic, private and public sectors and apply it to the task of developing the economy and improving the quality of life of Canadians. This goal is consistent with the framework to guide Canada's science and technology policy: Mobilizing Science and Technology to Canada's Advantage. Specific outcomes of this program include:

Immediate outcomes (during award period)

- ❑ increased networking and collaboration among researchers from Canada and abroad;
- ❑ leading –edge research findings that are relevant to the needs of the user sector (e.g., private and public sectors, non-governmental organizations, and others) and Canada's socio-economic development;
- ❑ nation-wide, multidisciplinary and multisectoral research partnerships that bring together key individuals and organisations necessary to address the network goals ;
- ❑ training that promotes multidisciplinary and multisectoral research approaches and encourages trainees to consider the economic, social, environmental and ethical implications of their work.

Intermediate/long term outcomes

- ❑ acceleration of the exchange of research results within the network and the use of this knowledge within Canada by organizations that can harness it for Canadian economic and social development;
- ❑ attraction and retention of world-class researchers and highly qualified personnel (HQP) in areas essential to Canadian economic and social development;
- ❑ creation of functional multi-regional interdisciplinary research teams;
- ❑ development of a pool of HQP in areas essential to Canadian economic and social development; and increase in Canada's international visibility and reputation.

These results are graphically depicted in the logic model in a subsequent section of this document. Many of these results are expected to occur over the course of the award, although the broader outcomes can occur years after the end of the funding period due to their complexity. The longer the timeframe of an expected result, the more external mitigating factors may influence its attainment. These mitigating factors include the state of the Canadian economy, for example.

3.1 Key Risk Areas

Key Risk Areas, described below, provide a macro view of the main areas that challenge the achievement of the NCE program's planned results. **Two** key Risk Areas were identified:

Program Flexibility and Demonstrating Added Value of NCE. These summarize the specific four key risks that will require careful management. The Key Risks areas were identified and assessed during a risk assessment exercise and are presented in Section 4.2. The Key Risks directly relevant to the NCE's program delivery are mapped onto the logic model (Figure 3.1). It should be noted that as with its ability to influence results, the NCE Secretariat's control and influence over risks also diminishes the farther the source of the risk is removed from the Secretariat direct activities. To gain efficiency and effectiveness, management of results and risks are to be integrated.

Program Flexibility

The NCE program has some flexibility in its design to ensure optimal delivery. Risks associated with two aspects of NCE program delivery were raised during the risk assessment: host institutions and funding cycles. Although they would be an exception, host institutions may be other than a university. In the rare case that a host institution is other than a university, concerns were raised regarding the capability of identifying deficiencies in their administrative and financial frameworks in a timely manner because non-university institutions are not currently included in NSERC's (which houses the NCE program) monitoring calendar. Networks compete for NCE funding cycles of up to seven years. In recent years, networks have been funded on a seven-year funding cycle. Starting in 2008-2009, networks will compete for funding cycles of 5 years. Networks funded for 5 years will have annual reporting requirements, which will put them on a different reporting approach and cycle than networks funded for seven years. These events could potentially result in expenditures that are non-compliant, tension regarding reporting requirements between networks funded for five versus seven years, and a need for additional resources for annual reporting and monitoring.

Demonstrating Added Value of NCE

As other networking programs exist at the provincial, federal and international levels, the NCE program is no longer as novel as it once was. This could create potential overlaps or perceptions of redundancy if other programs are generating results to address Canadian needs and problems. There is also competition in the national and international innovation system resulting in leading edge research being done by more and more groups across Canada and abroad. If the NCE program has difficulty demonstrating added value in this environment, it could also have difficulty in attracting the best researchers, accessing support of key partners, ensuring its research is relevant to the user sector, and creating opportunities to translate and exploit knowledge produced.

3.2 Logic Model

A logic model identifies the linkages between the activities of a program and the achievement of its outcomes. It succinctly clarifies the set of activities that make up the NCE program and the sequence of outcomes that are expected to flow from these activities. The following logic model is an illustration of how the activities of the NCE program are expected to lead to the achievement of the final outcomes.

Activities

Selection of networks

Competitions are held regularly for renewal of existing networks and for new networks to be funded. All funding decisions are based on an arm's length and peer-reviewed assessment of applications by expert panels and selection committees.

Program management

The NCE Secretariat is responsible for the day-to-day management of the NCE program. The NCE Secretariat receives administrative support from NSERC.

Monitoring and evaluation

The monitoring of awards is an ongoing function of the NCE Secretariat that consists of ensuring that NCE funds are used effectively to attain the expected results. These monitoring activities are linked to ongoing performance measurement and the data collected in this context can also be used for the purpose of periodic evaluations.

In order to rationalize the various reporting requirements of the program, the program's Results-based Management and Accountability Framework (RMAF) incorporates existing peer review and program monitoring processes. The major tools used in this context are annual statistical and financial tables as well as annual corporate reports provided by the networks; annual or mid-term progress reports; and progress reports for renewal applications. To facilitate consistency and comparability of information and data, networks use pre-set templates and models to prepare these tables and reports.

The NCE Secretariat will compile, revise and analyze statistics annually and report to the NCE Management Committee on various trends and confirm if the NCE Program objectives are met. The NCE Management Committee may then make recommendations to improve or adjust the program if necessary. Summative evaluations will also be used to monitor and evaluate program performance every five years.

Outputs

Funded Networks

As a result of the peer-reviewed competitions, new or renewing networks are selected and funded. The Selection Committee recommends the annual grant amounts to be allocated to the networks funded, and the Steering Committee makes the final decision on the funding. The NCE Secretariat informs the applicants of the competition results.

Agreements with networks

Prior to the release of the first instalment of the award to the network, a Funding Agreement that outlines the terms and conditions for funding under the NCE program, as well as the governance structure of the network must be signed by designated representatives.

Release of the first instalment of the award is also conditional on the signing of a Network Agreement by participating institutions that receive NCE funds. This agreement sets out the

operating rules of the network and outlines the rights and obligations of its investigators and participating institutions.

Templates of Funding and Network Agreements developed by the NCE Secretariat are used by the networks.

Advice and direction to networks

Networks receive advice and direction from the NCE Secretariat on various aspects related to the networks' development and ongoing activities and termination. They also receive advice on requirements and procedures for negotiation of internal Agreements (MOUs, affiliate agreements).

Reports on awards monitoring, performance reviews and evaluations

Networks provide annual statistical and financial tables; and annual corporative reports. Progress reports are provided annually or at mid-term and for renewal and Management Funds applications. These reports constitute an important information and data input into the performance-based management system.

Immediate Outcomes

The networks are expected to direct leading-edge research that is relevant to Canada's socio-economic goals. In addition, the research should be carried out in a way that involves a high degree of networking and collaboration among researchers.

The NCE program was designed to overcome the traditional barriers between academic research, industrial exploitation and public use of research results and stimulating collaboration. In this context, networks are expected to build strong partnerships across all sectors in the first years of their existence.

The networks are also expected to build international collaborations and partnerships where applicable to increase Canada's international visibility and reputation.

Intermediate Outcomes

An important intermediate outcome is the transfer of findings and knowledge including trained graduates and highly qualified personnel to the private, public and not-for-profit sectors. This will be achieved by generating high-quality research that meets the needs of government, industry and other user groups and that is relevant to Canada's socio-economic development.

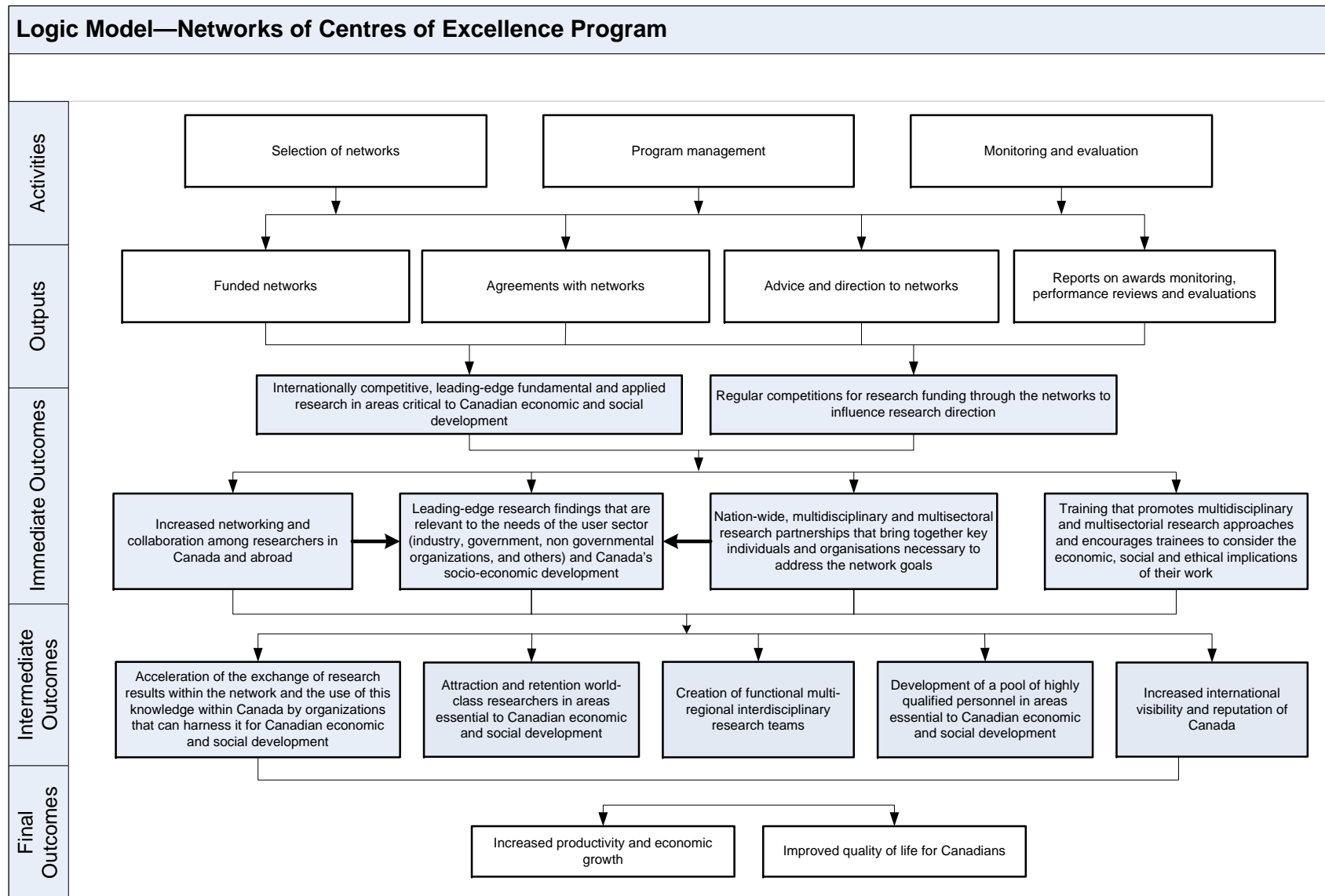
In addition, the program should contribute to strengthening Canada's research base, through the training of new researchers in a multidisciplinary and multisectoral setting and attraction and retention of experienced researchers.

Final Outcomes

Final outcomes represent the broader societal impacts that the NCE Program contributes to along with other programs and initiatives, as well as environmental factors. It is expected that the Program will contribute to final outcomes at the national level however, the degree to which

the Program can influence the achievement of these longer-term outcomes is considered to be even less than for previous levels of outcomes. These are usually not measured at the program level due to problems with attribution. Ultimately, the NCE program should contribute to the government's overall objectives of improved quality of life and a stronger economy.

Figure 3.1: NCE Logic Model



3.3 Accountabilities

Consistent with the S&T Strategy the NCE program fulfils the government's commitment to take an integrated approach to program delivery. The NCE program is a federal program administered jointly by the Natural Sciences and Engineering Research Council, the Canadian Institutes of Health Research, and the Social Sciences and Humanities Research Council in partnership with Industry Canada.

3.3.1 Governance Structure

The two bodies governing the NCE program are:

- the NCE Steering Committee, composed of the Presidents of the three Granting Agencies, the Deputy Minister of Industry Canada (or delegate); and the President of the Canada Foundation for Innovation (observer); and
- the NCE Management Committee, composed of Directors-General and/or Vice-Presidents from the three Granting Agencies and from Industry Canada, the Director of Policy and International Relations (NSERC), and the Associate Vice-President of the NCE program.

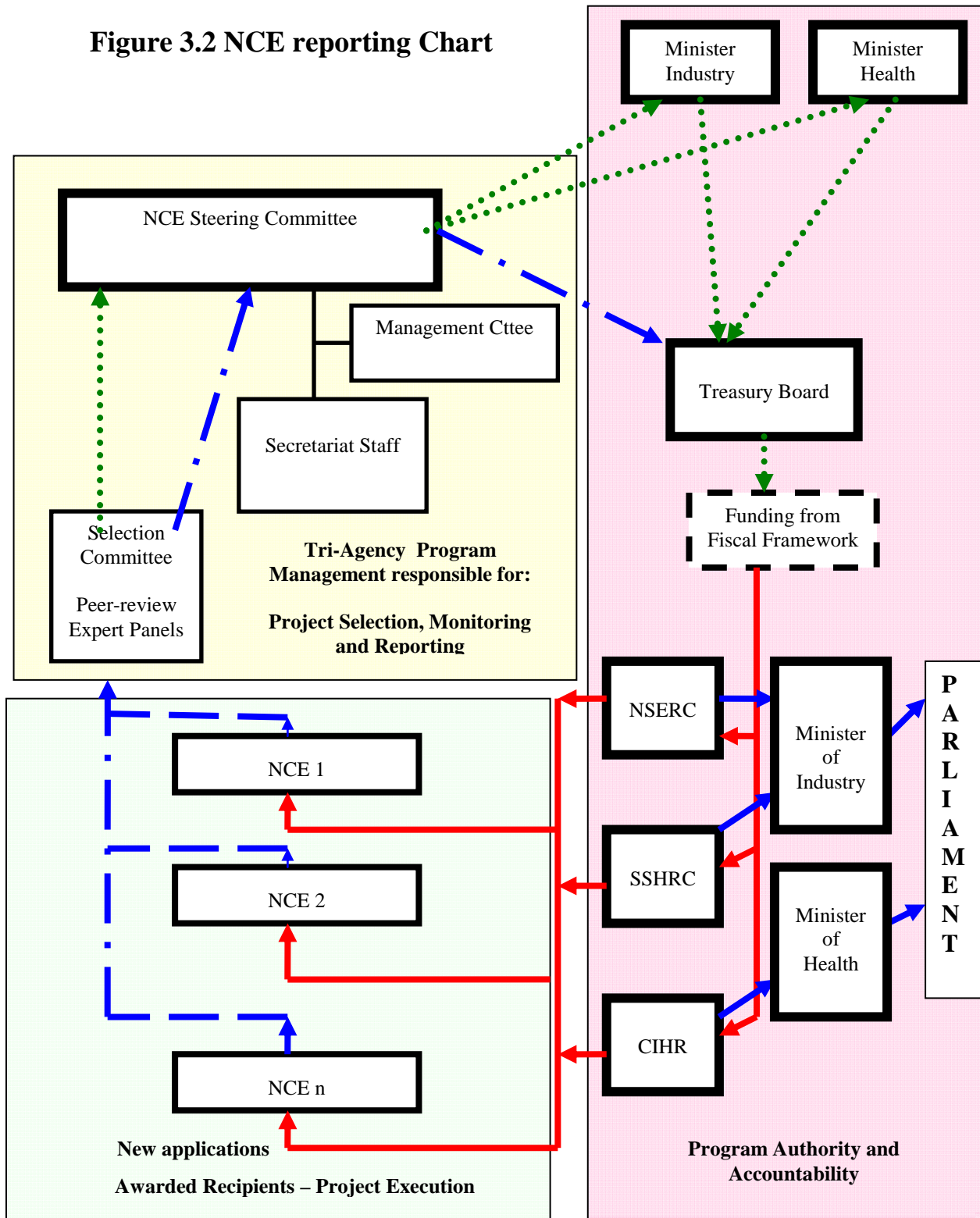
The NCE Steering Committee will be responsible for final funding decisions. The Granting Agencies will be accountable for all reporting obligations to Treasury Board and Parliament with respect to the funding they have received for the centres. Day-to-day administration of the program is provided by the NCE Secretariat made up of staff from the three granting agencies. The NCE Secretariat is housed at NSERC.

The diagram on the following page summarizes the overall governance and reporting structure of the NCE programs as follows:

1. Program Management, including network selection, monitoring and activity/impact reporting carried out by the NCE Secretariat consisting of the following:
 - a. NCE Steering Committee made up of the three Agencies Presidents (NSERC, SSHRC and CIHR), Deputy Minister of Industry Canada (or his representative) and President of CFI (observer). Chair is President of NSERC
 - b. NCE Secretariat staff to support the administration of the program
 - c. Various Expert Panels and Selection Committees assembled on an ad-hoc basis to review network applications and progress reports
 - d. Program performance is measured annually through generic indicators and is evaluated regularly through an Interagency Evaluation Committee
2. Program Authority and Accountability is achieved through the existing Granting Agencies authority and accountability structure as follows:
 - a. Annually, each Granting Agency reports to Parliament on the funds allocated to the various networks
 - b. Annually data collected by the NCE Secretariat on the performance and impacts of these networks is reported to the Treasury Board

3. Network Execution is the responsibility of recipient organisations, which must meet strict eligibility criteria, including being incorporated with an independent Board of Directors.
 - a. Each NCE is assigned a responsible Secretariat staff who is observer on the Board and the various key committees which the Board may establish
 - b. Annually or at mid-term, each project reports on its performance and impact against the program criteria.

Figure 3.2 NCE reporting Chart



3.3.2 Roles and Responsibilities

The main responsibilities of NCE program managers and staff include program development and the management of the peer review process used to award grants. This involves providing advice to applicants, promoting the NCE program through visits and other presentations, and monitoring the awards. Program monitoring and financial monitoring of awards are described in detail in section 5.1 Performance and Risk Monitoring Plan.

3.3.3 Review Process and Decision

Networks compete for NCE funding cycles of up to seven years; the total number of years a network will be funded will not exceed 15 years. For networks funded for two five-year funding cycles, a third (and final) funding cycle may be available where a network has developed and built on its partnerships to progressively transform itself into a partner-driven network. In a partner-driven network the partners become the lead applicants. The partners define the business plan and the research agenda.

The NCE program operates within a framework of clear selection criteria, in the context of the present and future challenges facing the Canadian innovation system, and in light of Canada's needs and government priorities; and a rigorous process of peer review for awarding funding within the program. The peer-review process involves an intent to apply and a full application stage, as described below.

3.4 Applications and Progress Reports

3.4.1 Intent to Apply

Applicants proposing new networks must first submit a letter of intent which outlines the issues or problems that the Network will address. It should also outline the proposed network's vision, socio-economic context and key participants of the proposed network and summarizes how it will address the criteria and further the objectives of the NCE program. . A letter of intent is not required for a renewal application. Applicants whose letter of intent passes the initial screening process may request funding towards a Full Application Preparation (FAP). FAP funding can be used for application-related expenses such as travel, communications and workshops, as well as for secretarial, clerical and co-ordination services

To request FAP funding, applicants must submit a letter outlining their required budget including a brief rationale of proposed eligible expenses.

3.4.2 Full Application

A full NCE application consists of the following:

- A strategic plan addressing the five NCE program criteria (includes a proposed budget and performance metrics);
- Network investigators' Curriculum Vitae information;

- ❑ Letters of support and summary of contributions the applicants have secured from supporting organizations.

In addition to the requirements listed above, grantees presenting a renewal application are asked to provide a progress report in which they describe the network's progress in achieving its own goals and objectives. Progress for the network as a whole must be detailed in terms of accomplishments that measure against the five NCE selection criteria and the research metrics the network submitted in their original application.

For each competition, the NCE Steering Committee will appoint a Selection Committee composed of international-calibre experts with broad expertise representing the domains of the three Granting Agencies and individuals representing the relevant receptor groups.

The Selection Committee will review the letters of intent based on the selection criteria, the application's relevance to the NCE Program goal and objectives as well as, if applicable, the proposed network's relevance to the target area and make recommendations on which applicants should be invited to submit full applications to the NCE Steering Committee for decision.

The NCE Steering Committee will be responsible for appointing interdisciplinary and multi-sectoral expert panels to evaluate each full application based on the NCE selection criteria. An expert panel will meet with representatives of each group of applicants and their partners. The expert panel will provide a detailed evaluation of the strengths and weaknesses for each selection criterion and an assessment of the appropriateness of the requested budget. The review reports, which will be provided to the respective applicant groups after the competition, will be transmitted to the Selection Committee.

Taking into account the reports of the expert panels, the Selection Committee will review and rate the applications based on the selection criteria. The Selection Committee will transmit a priority-ranked list of networks recommended for funding along with a list of recommended awards to the NCE Steering Committee for decision. The decisions reached by the NCE Steering Committee are final. There is no appeal process.

A public Competition Report will provide an overview of the competition along with a summary analysis of each application recommended for funding. Each group of applicants will receive a confidential evaluation report on their application

The NCE Secretariat will be the primary point of interaction for all applicants throughout the life of their networks. Funding disbursements will be managed by the NCE Secretariat and disbursed to the recipient(s) against a funding agreement under the legal authority of NSERC.

All networks will provide Progress Reports annually or at Mid-term. Bilingual Corporate Reports are required annually: The Progress Reports will indicate networks' progress against the milestones presented in the original application, including the major achievements of the network over the last year, strategies used to achieve the goal, any course corrections, or deviations from the original objectives and budget plan. In addition, the Progress Reports will include statistical tables, financial reports, statements of other sources of funding, and

administrative reports such as conflict of interest and environmental review reports as stipulated by the NCE Secretariat

3.5 Reporting Requirements and Review Process

All networks will provide Progress Reports and bilingual Corporate Reports annually.

The Progress Reports will indicate networks' progress against the milestones presented in the original application, including the major achievements of the network over the last year, strategies used to achieve the goal, any course corrections, or deviations from the original objectives and budget plan. In addition, the Progress Reports will include statistical tables, financial reports, statements of other sources of funding, and administrative reports such as conflict of interest and environmental review reports as stipulated by the NCE Secretariat.

Review Process for Networks with Seven-Year Cycles

For networks funded for seven-year cycles, the progress of each funded network will be monitored annually. At the mid-point of the funding cycle, each network will also prepare a comprehensive mid-term report based on their annual Progress Reports and provide an updated strategic plan.

The mid-term report will form the basis for an in-depth review of the network's performance. Performance will be assessed against the program criteria as defined in these terms and conditions. The review will be conducted by an expert panel that makes recommendations to the NCE Steering Committee

The mid-term review may result in continued funding, continued funding on a conditional basis, or the phasing out of a network before the end of the current award.

Review process for Networks with Cycles of Less than Seven Years.

For networks with funding cycles of less than seven years, the progress of each network will be monitored annually by a sub-group of the Selection Committee, the Monitoring Committee.

The Annual Review by the Monitoring Committee may result in a recommendation for an in-depth review of the Network by an Expert Panel.

The annual or in-depth review may result in continued funding, continued funding on a conditional basis, or the phasing out of a network before the end of the award.

4 Risk Assessment and Management Summary

Through systematic risk identification, assessment and development of response procedures, program management and officers gained an explicit and common understanding of the key risks faced by the NCE program. This analysis has established the main operational risk mitigation measures and controls that will be integrated into program management practices to ensure a cost-effective balance between risk levels, investments in response measures and stakeholders' interests.

Preparation Steps

Preparatory activities included:

- ❑ selection of the parties that should be involved - program managers from NCE and related programs, as well as representatives from corporate management functions in the Granting Agencies, and external risk management experts;
- ❑ establishment of a "time horizon" which reflects the multi-year funding timeframe;
- ❑ review and refinement of a Risk Matrix Tool to set criteria for estimating the levels of impact and likelihood of risks - see Appendix A;
- ❑ consideration of a Sources of Risk Template, as a prompt for risk identification; and
- ❑ agreement on the definition of risk that would be used - "combination of the likelihood of an event and its impact" - International Standard (ISO)

4.1 Risk Management Process

The following risk assessment methodology was followed:

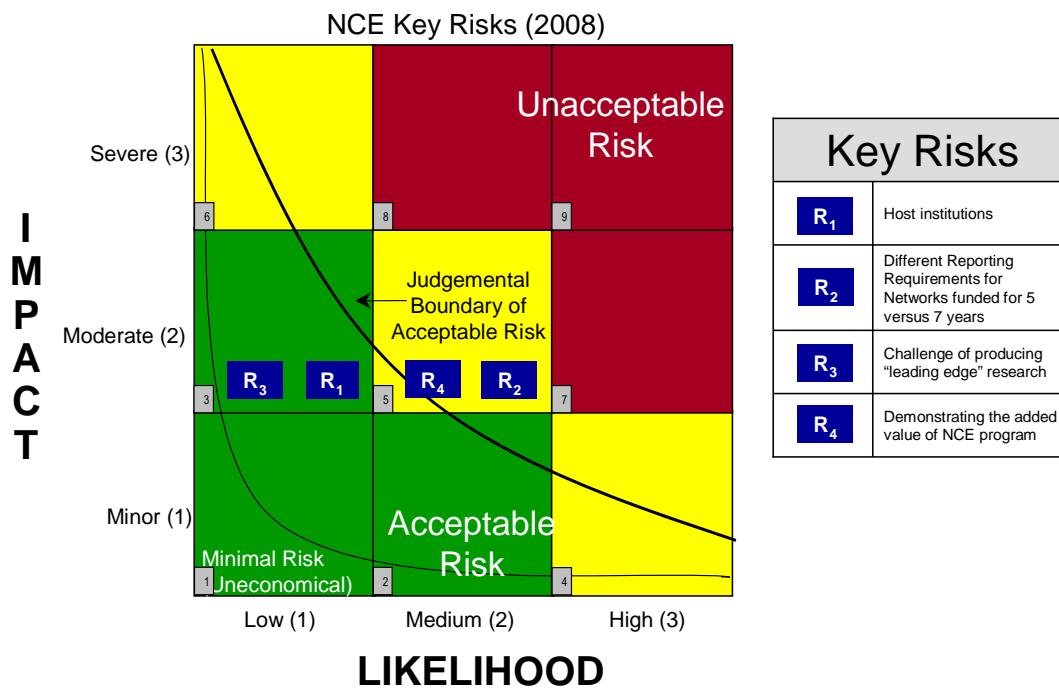
1. Understand Objectives
 - ❑ articulation of a summary objective based on the outcomes established in the Logic Model.
2. Risk Area Identification
 - ❑ brainstorming of all possible Risk Events (REs) (i.e., events, hazards, issues and circumstances that could impair the articulated objective); and
 - ❑ a preliminary analysis of the risk level, (high/medium/low) to determine the most significant/sensitive risks that would require further analysis.
3. Risk Assessment
 - ❑ identification of concerns and impacts related to the key Risk Events;
 - ❑ determination of existing mitigation measures and their efficacy; and
 - ❑ estimation of the residual risk which reflects the level of likelihood and impact of concerns materializing, given the information on existing measures and the criteria set out in the Risk Matrix.

4. Risk Response
 - development of incremental strategies in cases where the estimated level of residual risk and the expected actions set out in the Risk Tolerance Model attached in Appendix B.
5. Preparation of Risk Summaries
 - summary of areas of concern related to risks as well as their existing and incremental risk management strategies.

4.2 Overall Risk Assessment

Eleven risk events were identified as potential events or circumstances that can impede the achievement of the program’s objectives (refer to the Preliminary Risk Assessment, Appendix A). Each risk area was subject to a Preliminary Risk Assessment and four of the highest rated risk events were selected for a detailed risk analysis. The results of the detailed analysis of key risks, likelihood and impact, are presented in the Risk Scorecard (Figure 4.1). The worksheets for the detailed analysis are presented in Appendix C.

Figure 4.1 NCE Risk Scorecard®



® Registered Trade Mark of Wiltshire Consulting Inc.

5 Monitoring and Evaluation Plan

Ongoing performance measurement and risk monitoring refers to the systematic collection of information for monitoring how a program is performing or what changes in the level of a risk at any given point in time. It can be used to report on the level of attainment of planned results and planned levels of risk and on performance/risk trends over time. The key focus of the performance and risk measurement strategy is to establish what indicators will be used to measure progress towards outputs, outcomes or levels of risk, and how, when and by whom information on these indicators will be collected.

The implementation of performance and risk indicators will require careful planning including an analysis of the resources, skills, roles and responsibilities and priority for indicators relative to ongoing policy and program implementation demands.

The implementation risk may occur if the required careful planning is not done on a timely basis, in sufficient detail or appropriately addressed. This risk will be managed through regular monitoring by the NCE management.

5.1 Program Monitoring

The monitoring of awards is an ongoing function of the NCE Secretariat to ensure that NCE funds are used effectively to attain the expected results. These monitoring activities are linked to ongoing performance measures, also the data collected feed into evaluations.

Grant recipients are asked to provide annual statistics relative to the outputs and outcomes of the NCE program. The indicators are presented in the Performance and Risk Measurement Strategy Table in section 5.1.3.

The NCE Secretariat compiles, revises, and analyses these performance data on a yearly basis and reports to the NCE Management Committee on various trends and confirms if the NCE Program objectives are met. Evaluations will also be used to monitor and evaluate program performance every five years. Evaluations will make use of ongoing monitoring data as well as data collected during the evaluation.

Each agency will be accountable for all reporting obligations to Treasury Board and Parliament with respect to the funding received for the networks. The NCE Secretariat will be responsible for the administration of the program and for providing consolidated reports on the overall impact of the program. The NCE Secretariat will be the primary point of interaction for all recipient organizations throughout the life of their networks.

5.2 Financial Monitoring

The NCE Secretariat receives its funding through parliamentary appropriations and has a responsibility to Parliament and to Canadian taxpayers to ensure that the funds entrusted to it are well managed and used effectively, economically. This responsibility is shared with the recipient organization. The funds from the NCE Program will be transferred by the recipient organizations to the investigator's institution, therefore leveraging on the established financial and accounting frameworks in place at eligible institutions.

Robust controls are built into NCE Secretariat's systems and processes. They include clear assignments of responsibility and authority for the approval of awards, budget controls embedded in the NCE awards management database, and multi-faceted monitoring of ongoing awards. Financial controls, which are carried out by the Finance Division (Review and Investigations), Common Administrative Services Directorate at NSERC/SSHRC² and by the Finance Division at CIHR, are reviewed regularly and modified as needed.

Frameworks for ongoing monitoring of expenditures are in place, as described in detail in the *Tri-Agency Financial Administration Guide*. The Tri-Agency guide specifies that representatives of the Agencies will visit organizations periodically to:

- ❑ assess whether Grantees have the necessary financial/administrative tools to properly and effectively manage their research funds;
- ❑ review the effectiveness of procedures, systems and controls in place at the organization to ensure that the Agencies' policies and requirements are followed and that research funds are well managed;
- ❑ review expenditures from grant accounts to ensure that these were made in accordance with the established policies, requirements and guidelines and for the broad purpose intended; and
- ❑ share and disseminate information on guidelines and expectations for financial accountability and integrity.

In the event that a recipient organization is not a university, the monitoring procedure described above may be applied and adapted to reflect the organizational context.

Payment of Grants

Payment of NCE program grants is authorized by the NCE Steering Committee through one or more of the granting agencies. As outlined in the NCE program Terms and Conditions, grant instalments made are in accordance with the cash management provisions of the Treasury Board *Policy on Transfer Payments*. Since most grants are intended to provide financial support over time and require the recipient to continue to meet eligibility criteria, grants are typically paid in instalments. Consistent with the cash management policy and to minimize the amount of time and administrative effort required for making instalment payments, the standard function programmed into the award management information system is for the payment of each annual amount over twelve (12) instalments spread over the year.

Payments to grantees will be complete by the award end date. Grants are made for specific purposes. The NCE Steering Committee expects grant holders to use their grant for that purpose and in accordance with the Program's and their institution's policies and guidelines. The NCE Secretariat reserves the right to terminate or suspend a grant should the grant not be

² NSERC and SSHRC have Common Administrative Services such as the Financial Division, which oversees financial visits for both agencies and the NCE Secretariat.

used for its intended purpose or should the recipient cease to meet the eligibility criteria. Amounts paid after the expiry of eligibility or on the basis of fraudulent or inaccurate application, or in error, are subject to recovery action. The NCE Secretariat may withhold an appropriate amount of the total grant payable to the recipient until it is satisfied that the recipient meets the eligibility criteria of the program. Fraudulent use of NCE funds is referred to the appropriate legal authorities.

Stacking Provisions

Research funding is administered in the following environment:

- For each approved grant, the NCE Program only funds a portion of the amount requested due to financial and budgetary constraints. Because of this, networks and researchers are constantly seeking other sources of funds to finance their activities. In fact, the NCE Program encourages them to do so.
- When an investigator or network is successful in attracting other funding, from either governmental or non-governmental sources, the additional funds do not displace the grant provided by the NCE Program. The network is encouraged to use the additional funds to extend or accelerate the achievement of the network's overall objectives by expanding its research program, increasing its HQP development activities, enhancing its activities to exchange and exploit knowledge and technology or other activities to support the mobilization of research excellence for the benefit of Canadians.
- Research grants are not paid directly to the investigators. They are paid to organizations who are members of the Network. Recipient institutions must have a control framework to ensure that expenditures charged to research accounts are for the purpose intended by the grant.

The current principles and practices related to stacking of assistance are as follows:

- Access to NCE funds should be fair for all applicants, regardless of their other sources of funding;
- Applications are evaluated according to the program's selection criteria;
- Applicants must provide a statement of other sources of funding with their application and on a yearly basis. There must be no duplication of funding for the same research. However, when research programs are supported by multiple sources, the additional benefits of NCE support must be well explained and justified.

The onus is on the applicant to provide sufficient information to enable review committees to evaluate the relationship with other sources of support (held or applied for) and to recommend the appropriate NCE funding level. The consequence of not providing adequate information to enable a selection committee to assess the relationship to other research support is that the committee can recommend reduced or no funding.

Financial Reporting

The information collected for financial monitoring is reported on through various mechanisms. The table below (Figure 5.1) provides further details on financial reporting.

Table 5.1: Financial Reporting

Type of Report	Purpose	Contents	Frequency of Use/ Timing	Responsibility
Competition Results	Awards management - to report on the demand and take-up of NCE programs.	Summaries of number of applications, success rates and funding rates.	As required	NCE Secretariat
Financial Data Submission and Reconciliation Reports	Awards management - to reconcile spending at recipient organisations with the Grants Management System	Summary of Form 300 – recipient organisations expenditures	Annually	NCE Secretariat
Financial Monitoring Report	To report on the results of financial monitoring visits to recipients organizations	Assessment of select universities' policies/ guidelines, controls, and systems in place to ensure sound management of agencies funds.	As required	Tri-Agency Finance divisions

5.3 Performance and Risk Monitoring

Ongoing performance measurement is the regular collection of information for monitoring how a program is doing at any given time. It can be used to report on the level of attainment of planned results and on performance trends over time.

The following performance measurement strategy lists the planned outputs and outcomes of the NCE program as well as the performance indicators that need to be collected in order to monitor the progress of the program toward the achievement of its outcomes as described in the logic model.

The table also summarizes the ongoing risk measurement strategy for the NCE program. It focuses on the key risks identified on the Risk Scorecard that were at the high and medium levels. The measurement strategy for key risks is provided at the end of the strategy table. Where changes in the level of a risk would be easily identifiable, risk indicators are not included. Ongoing monitoring of the level of risk is very important because risk levels may quickly increase due to environmental factors or significant risk reduction/stabilization expected from the implementation of Incremental Risk Mitigation Measures. Risk indicators provide cost effective proxy information about the level of risk between formal assessments. Risk details are presented in italics. In some cases, performance indicators are in italics because they have a dual nature of providing performance and risk information. Dual indicators are a key efficiency feature of an integrated RMAF-RBAF.

Table 5.2 Performance Measurement Strategy for the NCE Program

Key Performance Area / Key Risk	Indicators	Data Source / Data Collection method	Responsibility for Collection	Timing / Frequency of measurement
Outputs				
Funded networks	Number of funded networks Amounts allocated to the funded networks	Selection Committee report/Steering Committee recommendations	NCE Secretariat	Every 1-2 years
Agreements with networks	Nature and number of agreements Opinions of program participants	Funding and network agreements	NCE Secretariat	Every 1-2 years
		Survey of network participants	Program Evaluation	Every 5 years (Evaluation)
Advice and direction to networks	Opinions of program participants	Survey of network participants	Program Evaluation	Every 5 years
Reporting on awards monitoring, performance reviews and evaluations	Number of annual or Mid-term/Renewal progress reports,	Administrative data	NCE Secretariat	Annually
Immediate Outcomes				
Increased networking and collaboration among researchers in Canada and abroad	Distribution of researchers by province, institution, discipline, sector and country	Statistical reports	NCE Secretariat	Annually
	Number of joint authorship publications by sector and country	Statistical reports	NCE Secretariat	Annually
	Assessment by members of Annual or Mid-term/Renewal Review Committees	Annual/Mid- term progress and Renewal reports	NCE Secretariat	Every 1 or 3 years and every 5 or 7 years
	Case studies demonstrating collaborations in planning and conducting research	Case studies	Program Evaluation	Evaluation
Leading –edge research findings that are relevant to the needs of the user sector (industry, government, non-governmental organizations, and others) and Canada’s socio-economic development	Expert opinion (assessment by members of annual or Mid-term expert panels and Renewal Selection Committees on the quality and relevance of the research findings)	Annual/Mid- term progress and Renewal reports	NCE Secretariat	Every 1 or 3 years and every 5 or 7 years
	Number of peer-reviewed publications and presentations	Statistical reports	NCE Secretariat	Annually
	Extent of which policies and practices of the user sector have been influenced by leading-edge research findings	Annual/Mid- term progress and Renewal reports	NCE Secretariat	Every 1 or 3 years and every 5 or 7 years
	Number and nature of national and international prizes and awards to NCE researchers for NCE research	Annual/Mid- term progress and Renewal reports	NCE Secretariat	Every 1 or 3 years and every 5 or 7 years
	Number of invitations as guest speakers at major international conferences and congresses	Annual corporate reports Annual/Mid- term progress and Renewal reports	NCE Secretariat	Every 1 or 3 years and every 5 or 7 years

Key Performance Area / Key Risk	Indicators	Data Source / Data Collection method	Responsibility for Collection	Timing / Frequency of measurement
Nation-wide, multidisciplinary and multisectoral research partnerships that bring together key individuals and organisations necessary to address the network goals	Distribution of researchers by province, institution, discipline and sector	Statistical reports	NCE Secretariat	Annually
	Lists of members and organizational affiliation of Research Planning Committees and of research projects	Statistical reports	NCE Secretariat	Annually
	Amounts of cash and in-kind contributions leveraged by NCE funds	Statistical reports	NCE Secretariat	Annually
Training that promotes multidisciplinary and multisectoral research approaches and encourages trainees to consider the economic, social, environmental and ethical implications of their work	Number of graduate students working on NCE projects and list of degrees disciplines	Statistical reports	NCE Secretariat	Annually
	Sectors of partners involved	Statistical reports	NCE Secretariat	Annually
	Number of undergraduate students working on NCE projects	Statistical reports	NCE Secretariat	Annually
	Others not counted above working on NCE projects and discipline of work	Statistical reports	NCE Secretariat	Annually
	Student satisfaction with research experience and/or job training	Survey of students	Program Evaluation	Every 5 years
Intermediate Outcomes				
Acceleration of the exchange of research results within the network and the use of this knowledge within Canada by organizations that can harness it for Canadian economic and social development	Number of patent applications	Statistical reports	NCE Secretariat	Annually
	Number of patents issued	Statistical reports	NCE Secretariat	Annually
	Number of license agreements	Statistical reports	NCE Secretariat	Annually
	Estimated licensing revenues generated by the networks	Statistical reports	NCE Secretariat	Annually
	Number of new and existing companies developed and maintained	Statistical reports	NCE Secretariat	Annually
	Number of transfer agreements	Statistical reports	NCE Secretariat	Annually
	Lists of new or improved products, services and processes resulting from the networks	Statistical reports	NCE Secretariat	Annually
	<i>Case studies demonstrating the impact of the NCE program on national and international socio-economic policies, norms, standards and regulations</i>	Annual corporate reports Annual/Mid- term progress and Renewal reports	NCE Secretariat	Annually Every 1 or 3 years and every 5 or 7 years
Number and magnitude of international agreements	Annual corporate reports Annual/Mid- term progress and Renewal reports	NCE Secretariat	Annually Every 1 or 3 years and every 5 or 7 years	
Attraction and retention of world-class researchers in areas essential to Canadian economic and social development	Number of post-docs working on NCE projects and area of research	Statistical reports	NCE Secretariat	Annually
	Number of research personnel retained in Canada due to the networks and area of work	Survey of NCE researchers	Program Evaluation	Evaluation
	Number of research personnel attracted to Canada and area of work	Statistical reports	NCE Secretariat	Annually
Creation of functional multi-regional interdisciplinary research teams	Distribution of researchers by province, institution, discipline and sector	Statistical reports	NCE Secretariat	Annually
	Number of joint authorship publications	Statistical reports	NCE Secretariat	Annually

Key Performance Area / Key Risk	Indicators	Data Source / Data Collection method	Responsibility for Collection	Timing / Frequency of measurement
Development of a pool of highly qualified personnel in areas essential to Canadian economic and social development	Number of post-docs working on NCE projects	Statistical reports	NCE Secretariat	Annually
	Number of graduate students working on NCE projects	Statistical reports	NCE Secretariat	Annually
	Number of undergraduate students working on NCE projects and area of work	Statistical reports	NCE Secretariat	Annually
	Others not counted above working on NCE projects (same)	Statistical reports	NCE Secretariat	Annually
	Number of students/trainees employed in skilled jobs (in Canada) by sector after they leave networks (same)	Mid-term review reports Annual corporate reports	NCE Secretariat	Every 3 years Annually
	Number of research personnel retained in Canada due to networks (same)	Survey of NCE researchers	Program Evaluation	Every 5 years
	Number of research personnel attracted to Canada from other countries due to networks (same)	Statistical reports	NCE Secretariat	Annually
Increased international visibility, and reputation of Canada	Number of international partners and collaborators	Statistical reports Evaluation	NCE Secretariat Program Evaluation	Annually Every 5 years
	Participation in international activities	Evaluation	Program Evaluation	Every 5 years
Final Outcomes				
Increased productivity and economic growth	<i>Number of jobs created outside the networks</i>	Statistical reports Case studies	NCE Secretariat Program Evaluation	Annually Every 5 years
	<i>Examples of companies created in new and underdeveloped industrial sectors</i>	Statistical reports Annual corporate reports	NCE Secretariat	Annually
	<i>Case studies demonstrating the impacts of network innovations on existing industries</i>	Case studies Annual corporate reports	Program Evaluation	Every 5 years Annually
	<i>Case studies demonstrating the impacts of networks on national, international norms and regulations</i>	Mid-term review reports Annual corporate reports	NCE Secretariat Program Evaluation	Every 3 years Every 5 years
Improved quality of life	<i>Examples of new processes and practices, new policies created that will improve quality of life</i>	Annual corporate reports Annual/Mid- term progress and Renewal reports Case studies	NCE Secretariat Program Evaluation	Annual Every 1 or 3 years and every 5 or 7 years Every 5 years
	<i>Case studies demonstrating the networks' contributions to the health and social well-being of Canadians</i>	Annual/Mid- term progress and Renewal reports Case studies	NCE Secretariat Program Evaluation	Every 1 or 3 years and every 5 or 7 years Every 5 years

Key Performance Area / Key Risk	Indicators	Data Source / Data Collection method	Responsibility for Collection	Timing / Frequency of measurement
<i>Key Risks</i>				
<i>Risk 1 – Host Institutions</i>	<i>Incidence of non-compliant expenditures</i>	<i>Annual progress/ financial and statistical reports / Program Manager Reports / Monitoring Reports</i>	<i>NCE Secretariat with the assistance of NSERC finance</i>	<i>Annually</i>
<i>Risk 2 – Different Reporting Requirements for Networks funded for 5 versus 7 years</i>	<i>Complaints by new networks Delays in annual reporting</i>	<i>Annual progress / statistical reports / Program Manager Reports/Monitoring reports</i>	<i>NCE Secretariat with the assistance of NSERC finance</i>	<i>Based on risk</i>
<i>Risk 4 – Demonstrating Added Value of NCE</i>	<i>See selected performance indicators above (italics)</i>	<i>See selected performance indicators above (italics)</i>	<i>See selected performance indicators above (italics)</i>	<i>See selected performance indicators above (italics)</i>

In response to the recent evaluation and International Advisory Committee recommendations, the NCE Secretariat plans to revisit the program's performance indicators; which may result in modifications to elements of the performance measurement strategy. The NCE Secretariat has plans to review and update the Performance Measurement System of the NCE Program with a view to creating a mix of both common performance metrics across networks and network specific indicators. The *Tri-Agency S&T Working Group on Measuring and Reporting of Impacts* (created this year) will be asked to assist in revising the performance indicators for the NCE Program.

5.3.1 Data Sources and Integrity

The data sources and collection methods identified in the Performance Measurement Strategy table constitute multiple lines of evidence that can be used to gather the appropriate information for each indicator. Each of these data sources and collection methods are described in this section. Note that data for some indicators will also be collected within the course of evaluation activities; the data sources more appropriate to evaluation are described in the next section of the RMAF.

5.3.2 Administrative and Monitoring Reports

The use of annual financial, statistical, corporate and progress reports submitted by recipient organizations as a data collection method for performance measures has been implemented for the NCE program for a number of years. Recipients send reports electronically, making data capture and analysis relatively easy and timely, two important features of any good performance measurement system.

Data integrity for progress/financial/statistical reports is based on the quality of the information provided by recipient organizations. The validity of the reporting instruments will be monitored and any required clarifications will be made.

Whenever possible, program data and statistics that are either already available or that can be collected using a file review method will be used. These data sources include survey results or data from available statistics on target population. Data integrity for this type of performance information largely depends on the methods used to collect it by the organizations providing it.

5.3.3 Corporate Databases

The NCE Secretariat has access to NSERC's database and has developed its own database that stores information necessary to manage and monitor the lifecycle of the granting processes, such as information relating to the receipt of the initial application; peer review; final approval, and monitoring of awards. Financial information and performance indicators collected from the networks annually are entered in the NCE database. The NCE database is an invaluable source of information for ongoing performance management, since reports can be developed once and then generated with updated information whenever necessary. Measures to ensure data integrity are built into the input process managed by program staff.

5.3.4 Review and Adjustment of the Strategy

Detailed performance measurement strategies for the NCE program has been developed over the design phase of the program and reflect the program structure at that time. Each performance measurement strategy will be reviewed as it is implemented, and changes made to reflect new program orientations or delivery mechanisms. In the future, the data collection methods used will be refined as needed to provide more streamlined information or to include missing information.

5.4 Performance Reporting

The information collected for performance measurement will be reported through various mechanisms. Each agency will be accountable for all reporting obligations to Treasury Board and Parliament with respect to the funding received for the NCE Program. The NCE Secretariat will be responsible for the administration of the program and for providing consolidated reports on the overall impact of the program. The table below (Table 5.3) provides further details on performance measurement reporting procedures.

Table 5.3 Performance Reporting

Type of Report	Purpose	Contents	Frequency of Use/ Timing	Responsibility
Departmental Performance Report	Reporting to Parliament on NCE program outcomes	Granting Agency funding received for the NCE program	Annual	Tri-Agency
NCE Annual Report	Reporting to public on the NCE programs activities and outcomes	Summary of outcomes and achievements	Annual	NCE Secretariat

5.5 Evaluation Plan

The NCE program has conducted three major evaluations in the past 10 years. A 1992/93 “interim” evaluation was conducted very early in the program’s lifetime, and dealt mainly with program design and program and network management issues to ensure the program was “on the right track.” The second evaluation, carried out in 1996-1997,³ was very thorough and comprehensive. It focused mainly on understanding the value added by the networking aspects of the program, and on documenting the program’s impacts on research, training, and users in government and industry. The third evaluation was launched in September 2001 and completed in June 2002. Its overall objective was to determine and analyze the major achievements and results in relation to the program objectives as well as to assess the value-added of the NCE program in the context of the current portfolio of federal programs in support of science and technology.

The most recent evaluation was conducted in 2006/2007 and was based on a combination of qualitative evidence gathered from case studies, documentation and key informant interviews and quantitative information in the form of survey research and a cost- effectiveness analysis. In addition to the program evaluation, the NCE Steering Committee appointed an International Advisory Committee (IAC) to provide advice on future strategic opportunities for the program. The IAC presented its final report in August 2007. The tasks and deadlines of the NCE-IAC have been aligned to complement the recent program evaluation.

The objective of the evaluation was to answer the following four broad questions, identified during an evaluation planning process:

Rationale

1. What is the niche of the NCE Program given the current national R&D funding environment? What specific needs are addressed by the program?

Program success

2. To what extent have the expected outcomes of the NCE Program been realized? Specifically, with respect to:

³ *Evaluation of the Networks of Centres of Excellence Program*, The ARA Consulting Group (now part of KPMG Consulting), January, 1997.

- ❑ Collaboration/networking
- ❑ Partnerships
- ❑ Leading-edge research
- ❑ Research training
- ❑ Transfer/exploitation of knowledge and technology

Program Cost-Effectiveness and Design Issues

3. Could similar outcomes/program impacts be achieved more cost-effectively with some other delivery mechanism?
4. How effective is the structure of individual networks in meeting research and knowledge translation objectives?

The NCE program will be evaluated every five years in line with the Federal Accountability Act. According to the Terms and Conditions for the NCE program, the first evaluation will be conducted before 2013 in order to accompany the renewal of the program's Terms and Conditions. As a Tri-agency program, the evaluation of the NCE program will be overseen by the Interagency Evaluation Steering committee, which is comprised of the Heads of Evaluation of CIHR, NSERC, SSHRC, and a representative of Industry Canada. A budget in the range of \$250,000 has been set aside for evaluation purposes.

5.5.1 Evaluation Issues

The first step in developing an evaluation strategy involves the identification of the issues and associated questions that need to be addressed during the evaluation. This section outlines the three basic evaluation issues (relevance, success, and cost-effectiveness). These evaluation questions will be reviewed and modified during a planning phase prior to conducting the evaluation in order to respond to any information needs required for decision-making purposes.

Relevance

The issue of relevance focuses on the needs that originally prompted the creation of the program and whether these needs have been met by the program. The relevance questions that should be covered in the evaluation of the NCE program include the following:

- ❑ What is the niche of the NCE program? What specific needs are addressed by the program?
- ❑ Are the program's objectives consistent with departmental and government-wide priorities?

Success

The issue of success refers to the achievement of the outcomes outlined in the logic model. In most cases, the evaluation questions for this issue will focus on the progress towards

achievement of the outcomes identified in the logic model developed for each program stream. Other questions may focus on some of the unintended impacts of the program.

- ❑ What have been the results of the program, specifically with respect to:
 - ❑ Collaboration/networking
 - ❑ Partnerships
 - ❑ Leading-edge research
 - ❑ Research training
 - ❑ Transfer/exploitation of knowledge and technology

Design/Delivery

- ❑ What has been the impact of the change from a 7 to 5 year funding cycle? Has this change been appropriate?

Cost-Effectiveness

The issue of cost-effectiveness focuses primarily on the delivery of the NCE program and on whether alternative delivery options would be more suitable. The evaluation questions for this issue include the following:

- ❑ Could similar outcomes/impacts be achieved more cost-effectively with some other delivery mechanism?

5.5.2 Evaluation Approach

An impact evaluation, focused on the results of the NCE program will be undertaken. Like the Performance Measurement Strategy, the Evaluation Strategy requires the identification of specific data requirements for each of the evaluation questions. These data requirements, or indicators, can be based on those in the performance measurement strategy or can be specific to one evaluation question. The summary table that follows (Table 5.4) identifies the indicators specific to each evaluation question presented above, as well as data sources or collection method, responsibility for collection, and the timing/frequency of measurement. In this case, the timing/frequency of measurement refers to data collected solely for the evaluation as well as data collected on an ongoing basis, as identified in the performance measurement table located in a previous section (5.3). To avoid duplication, the table below displays the specific indicators that will be measured through evaluation activities only.

Table 5.4 Evaluation Strategy

Evaluation question	Indicator	Data sources / collection methods	Responsibility for data collection	Timing / Frequency of data collection	
				Ongoing measurement	Evaluation
Relevance — High Priority					
What is the niche of the NCE program? What specific needs are addressed by the program?	<ul style="list-style-type: none"> • Overlap with other national programs, including similarity of target audience and consistency of objectives and outcomes. • Unique aspects of NCE program (e.g., multi-disciplinary aspects of networks, HQP associations, etc.) 	<ul style="list-style-type: none"> • Literature / document review • Key informant Interviews • Survey of Chairs of Board of Directors • Survey of researchers • Survey of partners • Survey of students 	Evaluation unit		Impact evaluation
Are the program's objectives consistent with departmental and government-wide priorities?	<ul style="list-style-type: none"> • Analysis of government priorities stated in literature 	<ul style="list-style-type: none"> • Literature/ document review • Interviews with Government representatives 	Evaluation		Impact evaluation
Success					
What have been the results of the program? Specifically with respect to: Collaboration	<ul style="list-style-type: none"> • Nature and extent of linkages within the networks (publications, in-person contacts, existence of and participation in research groups, domestic vs. international, investment of time in network) • Nature and extent of international collaboration • Trends in the evolution of linkages over time 	<ul style="list-style-type: none"> • NCE performance data • Data document review • Case studies • Survey of researchers/ partners 	Evaluation /NCE Secretariat	Ongoing Monitoring	Impact evaluation
Partnerships	<ul style="list-style-type: none"> • Nature and extent of partnerships (collaboration in research planning, implementation and dissemination, reciprocity, regional vs. domestic vs. international, intensity of partnership) • Number of personnel involved, province, academic vs. private vs. public sector) • Discipline representation and academic / private / public sector representation among members of research planning committees and of research projects • Assessment of partnerships made by members of Mid-term/Renewal Review Committees • Sustainability of partnerships during NCE funding and beyond 	<ul style="list-style-type: none"> • NCE performance data • Data document review • Case studies • Survey of researchers/ partners • Network Analysis (survey of organizations) 	Evaluation /NCE Secretariat	Ongoing Monitoring	Impact evaluation

Evaluation question	Indicator	Data sources / collection methods	Responsibility for data collection	Timing / Frequency of data collection	
				Ongoing measurement	Evaluation
Leading-edge research	<ul style="list-style-type: none"> • Number of peer-reviewed publications/presentations • Number and nature of prizes / awards for NCE research • Number of invited presentations at international conferences • Proportion of network researchers on the ISI Highly Cited List compared to the proportion of network researchers overall • Proportion of "high-risk" projects 	<ul style="list-style-type: none"> • NCE performance data • Data/document review • Case Studies • Survey of researchers/ partners 	Evaluation /NCE Secretariat	Ongoing Monitoring	Impact evaluation
Research training	<ul style="list-style-type: none"> • Number of post-docs, grad students, undergraduate students, and other HQP working on NCE projects • Number of trainees receiving salary support for NCE research • Number of specialized training opportunities created by Networks (Strategic plans for HQP) • Support for student training, including: thesis support, support for students to attend conferences, support for student research • Number of trainees employed in skilled jobs, in Canada, after leaving networks; number employed as professionals in networks after training • Proportion of trainees involved in multidisciplinary research 	<ul style="list-style-type: none"> • NCE performance data • Case studies • Data/document review • Survey of researchers/ partners • Survey of students 	Evaluation /NCE Secretariat	Ongoing Monitoring	Impact evaluation

Evaluation question	Indicator	Data sources / collection methods	Responsibility for data collection	Timing / Frequency of data collection	
				Ongoing measurement	Evaluation
Transfer / exploitation of knowledge and technology	<ul style="list-style-type: none"> • Level of activity in the transfer/exploitation of knowledge and technology • Number of patents applied for and issued • Revenue increases among partners due to NCEs • Number of license agreements and amount of associated revenue • Number of new and existing companies developed and maintained • New/improved products / services / processes • Products, processes or services commercialized by firms operating in Canada • Number of students hired by partners • Evidence of impact on national / international policies / norms / standards / regulations (social innovation and implementation of effective public policy) • Nature of solutions generated/ challenges overcome 	<ul style="list-style-type: none"> • NCE performance data • Case studies • Survey of researchers/partners • Survey of students 	Evaluation /NCE Secretariat	Ongoing Monitoring	Impact evaluation
Design/Delivery					
How effective is the structure of individual networks in meeting research and knowledge translation objectives	<ul style="list-style-type: none"> • Informed opinions of key stakeholders (network managers and scientific directors, partners, researchers, program officers, Expert Panels and Selection Committee members, Board Chairs) 	<ul style="list-style-type: none"> • Data/document review • Key informant interviews (network managers, scientific directors, program officers, expert panel and selection committee members, • Survey of researchers/ partners • Survey of Chairs of Boards of Directors • Cost-effectiveness analysis 	Evaluation		Impact evaluation
Cost-effectiveness					
Could similar outcomes/impacts be achieved more cost-effectively with some other delivery mechanism?	<ul style="list-style-type: none"> • Informed expert opinion 	<ul style="list-style-type: none"> • Key informant interviews 	Evaluation		Impact evaluation
	<ul style="list-style-type: none"> • Administrative costs as a percentage of total costs in comparison to other similar networking programs 	<ul style="list-style-type: none"> • Financial data / document review • Cost effectiveness analysis 	Evaluation / NCE Secretariat	Ongoing Monitoring	Impact evaluation

5.5.3 Data Sources and Collection Methods

Surveys/Interviews with Target Audiences

Surveys and interviews will be used in the context of program evaluations to obtain data on the opinions and perceptions of university researchers, private and public sector and not-for-profit partners, graduate students, post-doctoral fellows, granting agencies, and other experts. Periodic surveys also allow the collection of data that can be used to validate other data collection methods, such as the review of progress and final reports. A consultant is usually tasked with the survey process.

Literature/Document Review

The review of existing literature is a useful way to get a broad perspective on a specific topic. It is particularly useful when other methods, such as surveys or interviews would be too costly to implement.

Cost Effectiveness Analysis

The cost effectiveness analysis proposes a systematic analysis of whether a program is an efficient delivery model or whether the same results could be achieved at a reduced cost by using other delivery models. It allows establishing the extent to which similar outcomes/program impacts could be achieved more cost-effectively using an alternative delivery structure.

Case Studies

Case studies will involve the systematic documentation (e.g., using files reviews and interviews) of the impacts of the networks and their research activities undertaken to support the private sector. Attempts are made to identify not only the direct impacts by the private sector but also the indirect impacts, such as change in business culture and contributions to the improvements to the national innovation. They can also provide good illustrations and understanding of the effects of institutional, organizational, and technical factors influencing the private sector S&T activities. Retrospective case studies focusing on multiple scientific innovations and their commercialization rather than just one may be useful to identify impacts and linkages between the networks and the private and public sectors over long intervals of research investment. Generally, however, there is no way to add up all the results of a group of case studies to obtain a measure of the total impacts of a program.

5.6 Reporting Strategy

In addition to performance reporting, program performance is reported in evaluation reports. The NCE Management Committee oversees the implementation of the integrated RMAF-RBAF and all other reporting requirements. This implies that the NCE Management Committee and staff of the NCE Secretariat are responsible for managing adequate data collection, performance reviews and reporting on an ongoing basis.

The NCE Steering Committee is responsible for reporting the performance information and the evaluation results to Industry Canada. The evaluations of all of the NCE programs are conducted by the three Granting Agencies. To keep this process arm's length, and Interagency Evaluation Steering committee has been created to oversee the evaluation process for the NCE programs and submit a final evaluation report to the NCE Steering Committee. The Interagency Evaluation Steering Committee is composed of representatives from the three granting agencies, as well as from Industry Canada, Treasury Board, and the Department of Finance.

Table 5.5 Evaluation Reporting

Type of Report	Purpose	Contents	Frequency of Use/ Timing	Responsibility
Ongoing Performance Measurement	To report on annual progress toward success.	Integrated Annual Performance Report	Annual	NCE Secretariat
Special Studies	To obtain specialized information, for example, on implementation issues raised during usual monitoring of the program	Summary of specialized information	Variable, conducted on an ad hoc basis	NCE Secretariat
Impact evaluation Report	To report on the NCE program with respect to its continued relevance, program success and cost-effectiveness.	Summary of evaluation findings, conclusions and recommendations	End of year 5 of the program	Interagency Evaluation Steering committee

5.7 Risk Management Plan

The proposed Incremental Mitigation Measures identified during the risk assessment will be assessed for urgency and practicality in terms of short, medium, and long-term strategic planning. The objective is to determine the areas to focus investment based on priorities and available resources. Once there is agreement on the incremental measures that could be implemented, the NCE Program Management Committee will plan the management of key risks by establishing the relevant inputs and outputs (i.e. timelines, stakeholder accountability, resources, frequency of reporting, and stakeholder communications) as illustrated in Table 5.6, below. The proposed plan can then be set out in a **Risk Register** and appropriately integrated into strategic and operational planning and reporting.

Table 5.6 Risk Management Plan

Risk Management Tasks	Risk Management Plan	Time Line			Responsible Parties
		0-6m	6-12 m	12-24 m+	
1. Who needs to review the risk assessment to assure its reliability and credibility?	<ul style="list-style-type: none"> NCE Management Committee 	√			Associate Vice-President NCE
2. To whom do the results of the risk assessment need to be communicated and when	<ul style="list-style-type: none"> Chair of NCE Steering and NCE Steering NCE Management Committee 	√			Associate Vice-President NCE
3. Who needs to review/approve the choice of Incremental Risk Management Measures and Risk Indicators?	<ul style="list-style-type: none"> NCE Management Committee 	√			Associate Vice-President NCE
4. How will the measures be implemented and managed (activities, resources, skills, training, organization, roles etc.)?	<ul style="list-style-type: none"> As an ongoing element of the Secretariat management Final commitments to Incremental Risk Management Measures will be set out in a Risk Register and the status on action will be reported on the Risk Register semi-annually 		√	√	Associate Vice-President NCE
5. What stakeholders, if any, should be informed of the Key Risks and Incremental Risk Management Strategies?	<ul style="list-style-type: none"> Treasury Board of Canada, Secretariat 	√		√	Associate Vice-President NCE
6. What stakeholders, if any, need to be included in the implementation of incremental risks management measures?	<ul style="list-style-type: none"> None at this time, Incremental Risk Management Measures are internal to the NCE Secretariat 				N/A
7. What strategies should be in place to address potential surprise events (unforeseen events)?	<ul style="list-style-type: none"> Potential for surprise will be a regular consideration incorporated into NCE management regimes 	√			Associate Vice-President NCE
8. What is the strategy for updating the risk assessment on a regular basis? <ul style="list-style-type: none"> Updating the Risk Matrix Updating the Tolerance Model 	<ul style="list-style-type: none"> An update of the risk assessment will be done regularly The Risk Matrix and Tolerance Model will be reviewed with each update 		√	√	Associate Vice-President NCE
9. How will the results of the risk assessment and risk management strategy be reported and disclosed?	<ul style="list-style-type: none"> External reporting and disclosure will be done through the Reports to the NCE Steering Committee 		√		Associate Vice-President NCE Granting Agencies
10. How will the results of the risk assessment be coordinated with audits or evaluations?	<ul style="list-style-type: none"> Annual audit and evaluation plans will incorporate consideration of risk assessment updates 			√	NSERC Corporate Internal Auditor and Heads of Evaluation

5.8 Internal Audit

Program funding administered by the NCE Secretariat falls under the purview of NSERC's internal audit function. NSERC's internal audit function supports the agency's efforts to achieve its corporate objectives, through its independent assessment of NSERC's internal management framework and by providing senior management with assurance regarding its risk management, internal controls, and governance practices, including, but not limited to NSERC's core granting programs. In compliance with the Treasury Board Policy on Internal Audit, the priorities for NSERC's internal audit function are determined based on a risk-based audit-

planning framework. This framework includes the annual review of NSERC's core controls, as part of the holistic assurance regime, and annual assessment of specific risk exposures across NSERC, whereby programs and functional activities with the highest associated risks are recommended for audit, as part of the internal audit function's annual plan. The resulting annual plan for internal audit is submitted to NSERC's Audit Committee for approval.

The Auditor General of Canada is NSERC's external auditor and is responsible for conducting an external audit of NSERC's financial statements. Over the years, the Auditor General has consistently rendered an unqualified opinion regarding the agency's and NCE's financial statements.

Program Audit Framework

As a condition of eligibility, an organization applying for NCE funds shall have an established Board of Directors responsible for the approval of its annual financial reports and related audit. Recipient organizations are subject to active monitoring and the need for the audit of recipient organizations is established as a function of risk.

Recipients will be informed of the right to audit provisions of the Auditor General Act. The Auditor General (AG) has the power to inquire into the use of a transfer payment, including provision for the AG to undertake performance or compliance audits with respect to the use of federal funds, and for the recipient to make records and information available to the AG.

5.9 Audit Reporting

The table below (Table 5.7) provides further details on audit reporting.

Table 5.7 Audit Reporting

Type of Report	Purpose	Contents	Frequency of Use/ Timing	Responsibility
Audit Report	Assurance fundamental controls are performing effectively and identification of opportunities for improvement, if significant weaknesses are detected.	Statement audit objectives, scope, methodology applied, overall opinion, supported by detailed observations & related recommendations.	Variable – typically 2-3 assignments per year.	Internal Audit
Management Letters	Communication of issues of lesser significance, which do not adversely affect the audit opinion.	Description of issue sufficient to enable management to act, either to study the issue further or to take corrective action.	Periodic – tied to audits, but not always needed.	Internal Audit

Appendix A Risk Matrix Model

Risk Matrix

(Networks of Centres of Excellence Program)

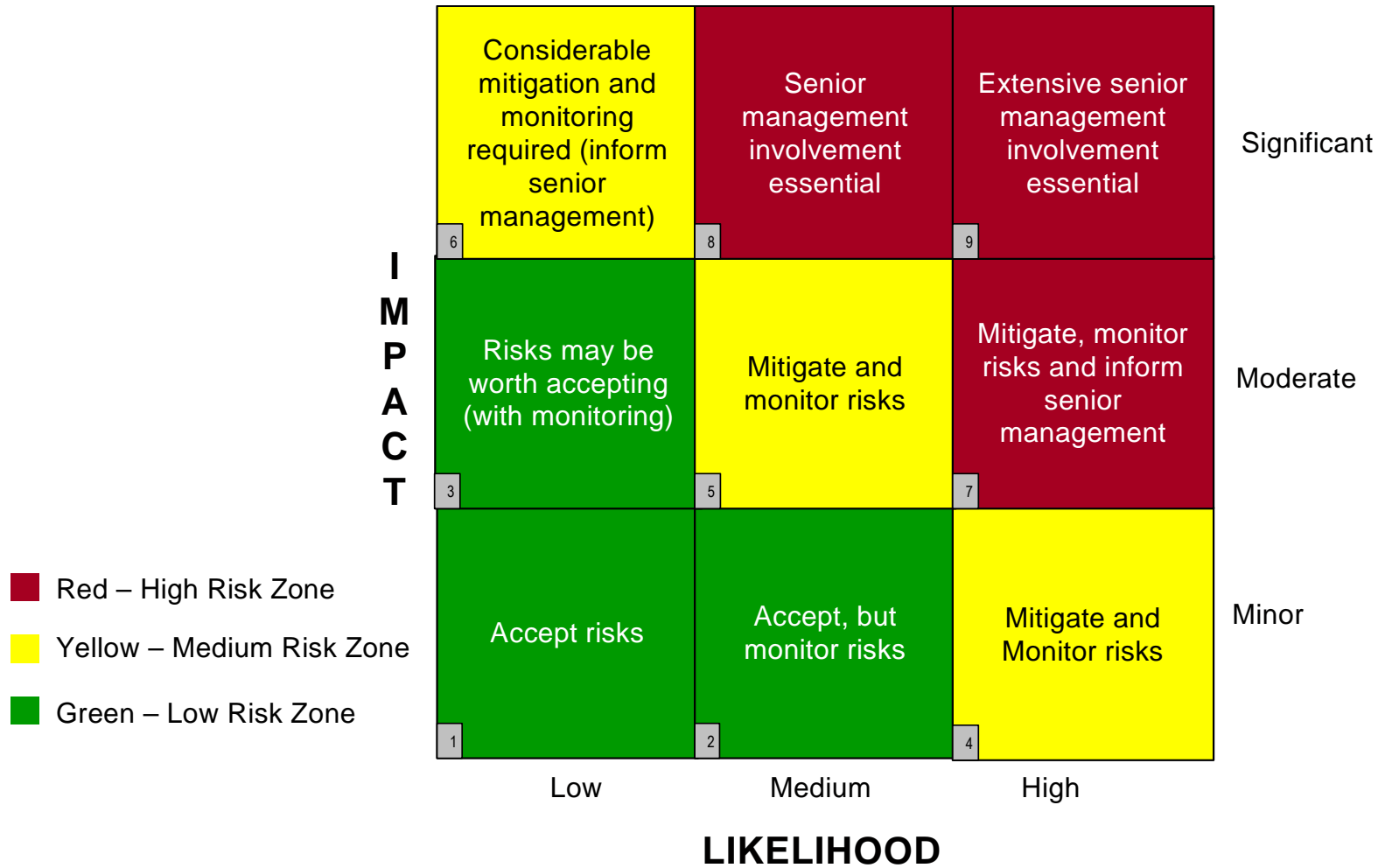
Qualitative Measures of Impact

Level	Impact	Damage & Liability	Operational Effects	Reputation loss
3	SEVERE	<ul style="list-style-type: none"> Loss or disclosure of highly sensitive client information (IM or key Grant application) or NCE Secretariat information Financial loss > \$250k 	<ul style="list-style-type: none"> Significant underachievement of objectives Disruption of programs/services > 14 calendar days for large numbers of clients Loss of key corporate knowledge 	<ul style="list-style-type: none"> Significant loss of client group trust or confidence in decision-making Public/media outcry for removal of Minister and/or departmental official Strong criticism by review agencies (OAG,PAC)
2	MODERATE	<ul style="list-style-type: none"> Loss or disclosure of sensitive client (IP or key grant application) or NCE Secretariat information Financial loss \$50k-\$250k 	<ul style="list-style-type: none"> Some underachievement of objectives Disruption of some programs/services 7 - 14 calendar days Some loss of key corporate knowledge 	<ul style="list-style-type: none"> Some loss of client group trust or confidence in decision-making Negative media attention Criticism by review agencies (OAG,PAC)
1	MINOR	<ul style="list-style-type: none"> Financial loss < \$50k 	<ul style="list-style-type: none"> Minor disruption of some programs/services 	<ul style="list-style-type: none"> Setbacks in building of client group trust or confidence in decision-making Some unfavorable media attention Some unfavorable observations by review groups (OAG, PAC)

Qualitative Measures of Likelihood (60 Months Time Horizon)

Level	Likelihood	Description
3	HIGH	The event is likely to occur
2	MEDIUM	The event may occur at sometime
1	LOW	The event is unlikely to occur

Appendix B Risk Tolerance Model



Appendix C Risk Assessment

RISK AREAS IDENTIFICATION WORKSHEET			
<i>Objectives / Outcomes:</i> Stimulate internationally competitive, leading-edge fundamental and applied research in areas critical to Canadian economic and social development; Develop and retain world-class researchers in areas essential to Canada's productivity and economic growth; Create nation-wide multidisciplinary and multisectoral research partnerships; accelerate the exchange of research results within the network and the use of knowledge within Canada			
Risk Areas <i>(including estimate of the potential for surprise element)</i>	Preliminary Risk Assessment		
	High	Medium	Low
1. Host Institutions		X	
2. Different Reporting Requirements for Networks funded for 5 versus 7 years		X	
3. Challenge of producing "leading edge" research that leads to Canadian economical and social development		X	
4. Demonstrating the added value of NCE program		X	
5. Challenge of meeting expectations for interdisciplinary and multisectoral training (HQP)		X	
6. Potential For Surprise		X	
7. Inappropriate use of funds			X
8. Funding inappropriate research			X
9. Intellectual Property Risk			X
10. Stacking funds			X
11. Conflict of interest			X

RISK ANALYSIS WORKSHEET

Objectives / Outcomes:

Stimulate internationally competitive, leading-edge fundamental and applied research in areas critical to Canadian economic and social development; Develop and retain world-class researchers in areas essential to Canada's productivity and economic growth; Create nation-wide multidisciplinary and multisectoral research partnerships; accelerate the exchange of research results within the network and the use of knowledge within Canada

Risk Area (R): R1 - .Host Institutions – In the rare case that a host institution is other than a university, possible deficiencies in their administrative and financial frameworks may not be identified in a timely manner leading to non-compliant expenditures.

Particular Concerns & Impacts (Damages & Liabilities, Op. Effects, Rep. Loss)	Existing Measures for Managing Risk Area	Residual Risk Level (1-9)	Incremental Risk Management Strategies	Responsible Party
<p>Concerns:</p> <ul style="list-style-type: none"> - Ensuring the financial and administrative framework for host institution and the networks relationship is appropriate and well managed is a key priority. It is an increasing priority with the coming program change whereby a host institution may be other than a university. - A non-university host may not be familiar be with granting Agency requirements and policies and possible deficiencies may exist in their administrative and financial frameworks. The granting Agencies' monitoring units are not currently including non-university institutions on their monitoring review calendar, so weaknesses that occur as a result of the program change may not be detected in a timely manner. <p>Impacts:</p> <ul style="list-style-type: none"> - Expenses incurred may be non-compliant with requirements and policies and may not be eligible. 	<ul style="list-style-type: none"> - Existing guidelines on Agency requirements and policies on the use of grant funds and funding agreements. - NCE Program Officers attendance at the Board of Directors meeting. - NCE Secretariat Financial reporting requirements. - NCE Secretariat experience in review of the financial data with assistance of Agency advisors <p>Efficacy(1-5)=3</p>	<p>3</p>	<ul style="list-style-type: none"> - Provide training to non-university institutions and provide name of appropriate Agency contacts (financial as well as program). 	<p>Associate VP NCE Secretariat with Senior NCE</p>

RISK ANALYSIS WORKSHEET

Objectives / Outcomes:
 Stimulate internationally competitive, leading-edge fundamental and applied research in areas critical to Canadian economic and social development; Develop and retain world-class researchers in areas essential to Canada's productivity and economic growth; Create nation-wide multidisciplinary and multisectoral research partnerships; accelerate the exchange of research results within the network and the use of knowledge within Canada

Risk Area (R): R2 – Different Reporting Requirements for Networks funded for 5 versus 7 years - Networks funded for 5 years will report annually while networks funded for 7 years will continue to report at mid-term, which may lead to tension between networks and a need for additional resources as a result of annual reporting.

Particular Concerns & Impacts (Damages & Liabilities, Op. Effects, Rep. Loss)	Existing Measures for Managing Risk Area	Residual Risk Level (1-9)	Incremental Risk Management Strategies	Responsible Party
<p>Concerns:</p> <ul style="list-style-type: none"> - Reporting is being changed from performance reporting to assessment reporting for the new networks which might raise concerns about being evaluated on a shorter time horizon than existing networks. - Reporting under the new requirements will be annual – this will likely result in an increased workload and require more infrastructure and HR resources to collect, store and analyze information reported annually. - Existing and new networks will not be functioning on the same reporting regime which may translate into additional work for NCE Secretariat staff - Reporting details for new network annual reporting may be more difficult to conceptualize and approve. In addition, turn around for annual reporting will require more timeliness, therefore it implies more resources - New networks are required to develop their own indicators, which may result in inconsistent quality and comparability of information and data. <p>Impacts:</p> <ul style="list-style-type: none"> - Tension between networks and NCE Secretariat regarding reporting requirements - Insufficient resources to meet reporting requirements - Decisions taken based on reported information may be challenged. 	<ul style="list-style-type: none"> - Experience in careful monitoring of data collected - Experience in review and evaluation of mid term report for existing networks (Statistical and financial tables) - Existing templates for annual and mid term reports can be used as the basis to build the annual reports - Good relationship with networks in completing reports thoroughly <p>Efficacy(1-5)= 2.5</p>	<p>5</p>	<ul style="list-style-type: none"> - Develop templates and guidelines for new networks to follow in developing and reporting on their indicators - Training sessions and workshops on reporting - Analysis of need for additional resources for reporting and monitoring 	<ul style="list-style-type: none"> - Associate VP NCE Secretariat with Senior NCE Managers - Associate VP NCE Secretariat with Senior NCE Managers - Associate VP NCE Secretariat

RISK ANALYSIS WORKSHEET

Objectives / Outcomes:
 Stimulate internationally competitive, leading-edge fundamental and applied research in areas critical to Canadian economic and social development; Develop and retain world-class researchers in areas essential to Canada's productivity and economic growth; Create nation-wide multidisciplinary and multisectoral research partnerships; accelerate the exchange of research results within the network and the use of knowledge within Canada

Risk Area (R): R3 - Challenge of producing "leading edge" research – Competition in the innovation system and engagement in multi-year programs and projects provide challenges to producing leading edge research which may lead to fewer opportunities to translate and exploit knowledge

Particular Concerns & Impacts (Damages & Liabilities, Op. Effects, Rep. Loss)	Existing Measures for Managing Risk Area	Residual Risk Level (1-9)	Incremental Risk Management Strategies	Responsible Party
<p>Concerns:</p> <ul style="list-style-type: none"> - Competition in the national and international innovation system - more and more high level players across Canada and abroad conducting leading edge research makes it difficult for NCE to demonstrate that its research leads to economical and social development - Significant attribution difficulties in linking the results of network research to economical and social development because there are many other long term funding programs which are directed at economical and social development (which input causes the effect) - Networks generally engage most of their funds in multi-year programs and projects, thus there is a certain amount of inflexibility in network research programs to address new and emerging issues in order to be leading edge <p>Impacts:</p> <ul style="list-style-type: none"> - Network research judged to be less relevant to the user sector and has less impact on current or social and economic issues - Canada would lose reputation as a research leader in some areas - Fewer opportunities to translate and exploit the knowledge produced 	<ul style="list-style-type: none"> - international peer review process and selection criteria are designed to ensure networks have potential for leading edge research to address issues of national economic and social development - selection of networks is linked to the priorities that are linked to the GOC S&T strategy - network board of directors is responsible for assessing the relevance of the network strategy to ensure that network research remains relevant - before receiving renewal funding, networks must submit revised strategic plans <p>Efficacy(1-5)= 4</p>	<p>3</p>	<p>None required</p>	

RISK ANALYSIS WORKSHEET

Objectives / Outcomes:

Stimulate internationally competitive, leading-edge fundamental and applied research in areas critical to Canadian economic and social development; Develop and retain world-class researchers in areas essential to Canada's productivity and economic growth; Create nation-wide multidisciplinary and multisectoral research partnerships; accelerate the exchange of research results within the network and the use of knowledge within Canada

Risk Area (R): R4 - Demonstrating the added value of NCE program – NCE is no longer unique as several provinces have similar programs which can lead to challenges demonstrating added value and potential difficulties attracting the best researchers and accessing support of key partners

Particular Concerns & Impacts (Damages & Liabilities, Op. Effects, Rep. Loss)	Existing Measures for Managing Risk Area	Residual Risk Level (1-9)	Incremental Risk Management Strategies	Responsible Party
<p>Concerns:</p> <ul style="list-style-type: none"> - When NCE was created, it was unique. However, there are now similar provincial and federal programs which create potential overlaps in certain areas. The overlaps create potential difficulties in getting the best researchers and accessing the support of private sector and government partners - Other network programs at the federal level also operate in a similar fashion, which can challenge the uniqueness of the program – a lack of uniqueness can result in loss of the best proposals and researchers - Challenge of involving all the players (e.g., community of researchers, SSH, Health, NSE) and sharing credits for achievements <p>Impacts:</p> <ul style="list-style-type: none"> - Effectiveness of the networks may decline without the best researchers - Network may seem redundant if others are generating results to address Canadian needs and problems - Potential lack of exchange of knowledge because networks are perceived as competitors - Effort communicating among networks increases 	<ul style="list-style-type: none"> - International peer review process and selection criteria are designed to ensure networks are always relevant at the national level - Program criteria states that networks must demonstrate that most relevant partners are at the table to address proposed issues. - NCE still has a strong reputation as a leader in multidisciplinary networked approach to research - Reporting requirements are designed to monitor the value added of the program <p>Efficacy(1-5)= 3.5</p>	<p>5</p>	<ul style="list-style-type: none"> - Refine current performance indicators to strengthen the demonstration of the value added through communication with S&T Working Group on Measuring and Reporting on Impact - Involvement of Tri-Agency Steering/management committees in monitoring the relevance of the program - Consider environment scan or other means of identifying overlaps with other org. and networks 	<ul style="list-style-type: none"> - Associate VP NCE Secretariat with Senior NCE managers in consultation with S&T Working Group on Measuring and Reporting on Impact - Associate VP NCE Secretariat - Associate VP NCE Secretariat with Senior NCE managers