

Risk-Based Audit Framework Networks of Centres of Excellence Program (NCE)

Section 1: Introduction

Purpose of the Risk-Based Audit Framework

The purpose of the Risk-Based Audit Framework (RBAF) is to describe the accountability and risk management environment in order to manage transfer payments in a manner sensitive to risks, complexity, accountability for results and economical use of resources.

The NCE RBAF has the following objectives which are to ensure that:

- Due diligence is exercised with regard to the expenditure of public funds.
- The program is administered in accordance with the Treasury Board terms and conditions of the contribution agreement and that recipients are selected and comply with the terms and conditions.
- Relevant legislation and policies (e.g. sections 32, 33, 34 of the Financial Administration Act and the Policy on Transfer Payments) are being respected.
- The quality of information available for use by the NCE program management is relevant, accurate and available for decision-making purposes.

Program Background

The NCE program is a federal program jointly managed by the three major 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) in partnership with Industry Canada (IC).

It is managed by the NCE Steering Committee, composed of the Presidents of the three granting agencies and the Deputy Minister of Industry Canada. Day to day administration is provided by the NCE Directorate made up of staff from the three granting agencies. The NCE program is hosted at NSERC.

Definition

A network is defined as a group funded under the Networks of Centres of Excellence program. The term award and/or grant is used as a synonym in this document.

Section 2: Roles, Responsibilities and Relationships

NCE Management is responsible for the day-to day management of ongoing financial and operational monitoring, compliance with terms and conditions, and reliability of results data. Other important activities include:

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 arm's length peer-reviews of applications conducted by Expert Panels and Selection Committees.

Monitoring and evaluation

The monitoring of awards is an ongoing function of the NCE Directorate to ensure that NCE funds are used effectively to attain the expected results. These monitoring activities are linked to ongoing performance measurement and risk-assessment. The data collected in this context can also feed into periodic evaluations of the program every five years.

NSERC Internal Audit is responsible for the conduct of internal audits that provide assurance on the adequacy of risk management practices, management control frameworks and information used for decision-making for all its programs, including NCE.

A Tri-Agency Review and Investigations team is responsible for the conduct of periodic visits to Canadian universities and/or research centres, institutes, colleges and hospitals to ensure that appropriate and sound financial practices are in place at these institutions and that the Agencies' guidelines are followed (CIHR's Grants & Awards Guides, NSERC's Researcher's Guide and SSHRC's Grant Holder's Guide). The monitoring approach is consistent with the Tri-Agency Memorandum of Understanding.

Grantees of the Networks of Centres of Excellence (NCE) are also the subject of such review visits.

Networks are responsible for financial accountability and for management of the grant as well as the research program.

Section 3: Program Profile

Origin and Background

The Networks of Centres of Excellence (NCE) program was established as a pilot project in 1989 as part of the federal Science & Technology Strategy to better link research with wealth creation.

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, no one knew if these features would add value, or indeed if they would work at all. The program was conceived as being experimental in nature, and individual networks took widely varying 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 NCE¹. Since that time, the number of networks has expanded considerably (currently standing at 22), and those once-controversial aspects are now taken almost for granted. Where previously it was difficult to find network-type programs, now we have the Canadian Institutes of Health Research (CIHR). Where once it was considered potentially dangerous to link pure research too closely to industry, now the National Research Council encourages (or at least supports) its staff to create start-up companies to exploit NRC research findings. Where “sole-author” science was once considered the ultimate test of scientific strength, now there are programs that encourage national, international as well as intercontinental collaborations. Thus the NCE model is widely used in the global research community.

Deliverers and Co-deliverers

The NCE Secretariat hosted by NSERC is the main deliverer of the program with the assistance of the two other granting agencies: the Canadian Institutes of Health Research (CIHR) and the Social Sciences and Humanities Research Council (SSHRC) and Industry Canada.

Canadian universities themselves, as well as affiliated hospitals and research institutes, and some industry consortia, also invest significant resources for the development and maintenance of the Networks. They are network partners that provide cash and in-kind contributions to individual Networks. They are represented on Networks' Board of Directors and/or Research Management Committees and, in some cases, participate in Network research and training activities. As such, they are key players in delivering the Program.

Payment of Grants

¹ Even five years ago, it was uncommon to find non-Canadian scientists who had ever heard of the distributed network model.

Payment of grants is authorized by the NCE Steering Committee through one or more of the granting agencies. Subsequent installments are approved annually, subject to the availability of funds, satisfactory progress, and the network's continuing compliance with the program's policies, terms and conditions.

For networks administered through a university, funds are released to the designated financial administrative unit of the host university, following normal payment schedules for the granting agencies. The network advises the host university on the amounts to be disbursed to participating institutions.

For networks not administered through a university, funds are released monthly in arrears to the financial administration unit of the network that is responsible for the distribution of funds to participating institutions.

Resources

NCE Program Budget Allocation	Total \$ to current year	
	Phase 1 (1988-1994)	\$240.0 million
	Phase 2 (1994-1999)	\$190.8 million
	Ongoing (yearly)	
	1998-1999	\$47.4 million
	1999 onward	\$77.4 million
NCE Operational Budget Allocation	Ongoing (yearly)	\$2.9 million

Reach

Primary targets

Primary targets are the individuals and organizations which the NCE Program aims to mobilize to achieve the expected results. University faculty whose research and students are supported with NCE funds, as well as public and private sector partners are the significant performers that are mobilised to ensure achievement of results.

Other stakeholders

Industries and organizations within the areas covered by NCE Networks are important stakeholders benefiting from the research results arising from the Networks. In many instances they are closely involved in commercializing new products, services or processes or in adopting new practices and policies, linked to NCE research. Globally, the NCE Program also bears the potential for impact on the development of entirely new industrial sectors in Canada. Parliament is another stakeholder given the significant role played by the NCE Program within its National Science and Technology Strategy as well as within the various activities of the Industry Canada portfolio. 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. Moreover, at the international level, many research results of the Program have impacted on the development of international standards, policies and regulations, thus affecting individuals and organizations outside Canada.

Goals and Objectives of the 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 in areas essential to Canada's productivity and economic growth;
- Create nation-wide multidisciplinary and multisectorial research partnerships that integrate the research and development priorities of all participants; and
- Accelerate 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.

Governance Structure

The two bodies governing the NCE program are:

- The NCE Steering Committee, composed of the Presidents of the three granting agencies and the Deputy Minister of Industry Canada; and
- the NCE Management Committee, composed of Director Generals from the three granting agencies and Industry Canada, the Director of Policy and International Relations NSERC, and the Director of the NCE Program.

Section 4: Risk Assessment and Management Summary

Methodology

In the context of this risk assessment, risk refers to the uncertainty that surrounds future events and outcomes. It is the expression of the likelihood and impact of an event with the potential to influence the achievement of the program's objectives.

The program administrator, program officers, and the senior internal auditor collaborated in the development of the RBAF and the risk assessment. Risks are reassessed on an ongoing basis upon significant changes to the program.

The steps of the risk assessment included: (A) risk identification, (B) risk assessment and (C) the documentation of key risks.

(A) Risk Identification

The program administrator and program officers brainstormed and listed all possible significant risks of this Program. In addition the results of the 1998 NSERC risk assessment was also reviewed and assessed if relevant to the NCE program. For each risk identified, a preliminary analysis of the risk level (high/medium/low) was conducted to determine the main risks that might require further analysis.

(B) Risk Assessment

Upon identification of the main risks, the likelihood and the impact was assessed based on the following definitions.

Definition of Impact

Level	Impact	Damage & Liability	Operational Effects	Reputational Loss
3	Severe	<ul style="list-style-type: none"> • Loss or disclosure of highly sensitive client or Council information • Loss of major asset(s) >\$250K • Serious injury 	<ul style="list-style-type: none"> • Disruption of all essential programs >7days for large number of clients • Significant underachievement of objectives • Cancellation of major projects without products • Loss of key corporate knowledge 	<ul style="list-style-type: none"> • Significant loss of client group trust • Public outcry for removal of Minister and/or departmental official • Media outcry for removal of Minister and/or departmental official • Strong criticism by review agencies
2	Moderate	<ul style="list-style-type: none"> • Loss or disclosure of sensitive client or Council information • Loss of asset(s) \$50K - 	<ul style="list-style-type: none"> • Disruption of some essential program services < 7 days • Schedule delays to 	<ul style="list-style-type: none"> • Some loss of client group trust • Negative media attention

		\$250K	major projects <ul style="list-style-type: none"> Some loss of corporate knowledge Some underachievement of objectives 	<ul style="list-style-type: none"> Criticism by review groups
1	Minor	<ul style="list-style-type: none"> Disclosure of personal information Loss of asset(s) < \$50K 	<ul style="list-style-type: none"> Schedule delays to minor projects 	<ul style="list-style-type: none"> Setback in building of client group trust Some unfavourable media attention Some unfavourable observations by review groups

Definition of likelihood

Level	Likelihood	Description
3	High	The event is expected to occur in most circumstances
2	Medium	The event should occur at sometime
1	Low	The event occurring is unlikely

(C) Documentation of key risks

Based on the results of the risk assessment, the most significant and higher risks have been identified and mitigating strategies documented. The results are presented below.

Key Risks and the Strategies to Mitigate Them

Overall the program is assessed as low. The results of the risk assessment identified the following key risks:

Risks	Risks Mitigation
<p>1. Financial/Program Management Risk</p> <p>Ensure that there are good management and financial practices so that the Program is well managed</p> <p>Assessed as being low</p>	<ul style="list-style-type: none"> Program is managed in accordance with its Terms and Conditions. Program has published rules, policies and requirements (i.e.: Program Guide) Network eligibility criteria are clearly spelled out Selection criteria are clearly spelled out Annual audited financial statements are approved by the Network's Board of Directors NSERC internal audits Conflict of Interest Policy Framework Governance structure in place (NCE Management and Steering committees)

Risks	Risks Mitigation
<p>2. Risk in the inappropriate use of funds</p> <p>Assessed as being low</p>	<ul style="list-style-type: none"> • Networks are administered according to the rules and policies of one of the three granting agencies as well as the regulations and administrative policies specific to the NCE Program • Networks are managed by a Board of Directors which is accountable to the NCE Steering Committee • Networks are subject to periodic and continuous monitoring by the NCE staff • Financial procedures for entitlement and payment of funds to the Network are in place (Funding and Network agreements which clearly spell out the terms and conditions of the grant) • Periodic monitoring of the control framework at recipient institutions (universities) on a rotational basis • Processes for ongoing monitoring of awards and post-award administration • Conflict of Interest Policy Framework

Risks	Risks Mitigation
<p>3. Risk in funding inappropriate research</p> <p>Assessed as being low</p>	<ul style="list-style-type: none"> • Selection of networks is based on peer review² to ensure the integrity of the research selection process • Selection criteria are published and clearly spelled-out • Networks are subject to regular peer reviews evaluating progress of the research at every 3-4 years • Performance data is collected annually for each network • Conflict of Interest Policy Framework • Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans

Risks	Risks Mitigation
<p>4. Intellectual Property Risk</p> <p>Programs that support research have to deal with intellectual property issues: protecting the research results of different investigators from different institutions and their partners.</p> <p>Assessed as being low</p>	<ul style="list-style-type: none"> • Rules and regulations spelled out in the Network agreement • Guidelines included in the Program Guide • Intellectual Property governed by university policies

² Peer review means the assessment of research proposals by impartial experts in the social sciences, medical sciences, scientific or engineering field of the applicant. It is an internationally recognised and accepted process supported by detailed guidelines and procedures.

Risks	Risks Mitigation
<p>5. Legal Risk Assessed as being low</p> <p>Access to Information Act and the Privacy Act (ATIP)</p> <p>Canadian Environmental Assessment Act</p> <p>Liability</p>	<ul style="list-style-type: none"> • Rules and procedures in place that comply with ATIP (i.e.: Program Guide) • Environmental review reports are requested on an annual basis • All Networks have liability insurance which covers the administrative centre and the members of the Board of Directors. Investigators are covered by their institutions

Risks	Risks Mitigation
<p>6. Risk of not achieving the planned Program outcomes Assessed as being low</p>	<ul style="list-style-type: none"> • Program has an RMAF which is aligned to existing peer-review and program monitoring processes • Regular monitoring activities linked to ongoing performance measurement and periodic evaluations (every 5 year) • Networks must submit annual statistical tables annual corporate reports, mid-term review reports, progress reports for renewal applications.

Risks	Risks Mitigation
<p>7. Risk of Stacking funds Assessed as being low</p>	<ul style="list-style-type: none"> • Stacking provisions in the Terms and Conditions and in the selection procedures for new networks

Risks	Risks Mitigation
<p>8. Risk of Conflict of Interest Assessed as being low</p> <p>Personal conflict may arise due to the many individuals involved, this might sometimes lead to personal conflicts.</p>	<ul style="list-style-type: none"> • Management structure in place: Board of Directors • NCE Staff monitoring and reporting back to NCE Management

Risks	Risks Mitigation
<p>9. Risk of reporting requirement overburden</p> <p>Assessed as being low</p> <p>There is a very important reporting load for this program, for the networks and their investigators as well as for the program's directorate. Enough to question the cost benefits of the program³</p>	<ul style="list-style-type: none">• Work group that will regularly review the extent to which the current annual reporting data are actually being used, and simplify reporting if possible.

³ KPMG Evaluation report, p. 30. Network participants qualified the reporting as “onerous”.

Section 5: Program Monitoring and Recipient Auditing

Program Monitoring

The monitoring of awards is an ongoing function of the NCE Directorate to ensure that NCE funds are used effectively to attain the expected results. These monitoring activities are linked to ongoing performance measures and the data collected in this context can also feed into periodic evaluations every five years.

All monitoring and evaluation activities are aligned to existing peer-review and program monitoring processes. The major tools used in this context are: annual statistical tables, annual corporate reports, mid-term review reports, and progress reports for renewal applications.

The NCE Directorate compiles, revises and analyses data on a yearly basis and reports back to the NCE Management Committee on various trends and confirms if the NCE Program objectives are met. Summative evaluations will also be used to monitor and evaluate program performance every five years.

In addition, each network has a Board of Directors that has the overall responsibility for the management, direction and financial accountability of the network, including the approval of the audited financial statements. The Board of Directors is accountable to the NCE Steering Committee.

Finally, the network's activities are subject to general overview and monitoring by the NCE Steering Committee through the NCE Directorate. NCE staff sit on each network's Board of Directors and Research Management Committee, thus monitoring compliance of the program's policies and procedures.

Monitoring of Canadian Universities

Class of recipients

Organizations eligible to receive funds are universities, affiliated hospitals and research institutes, and post-secondary institutions having a research mandate. 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. An industry consortium may receive funds to administer a network.

Research grants are not paid directly to the investigators. They are paid to organizations who administer the research accounts on the NCE Program's behalf. These institutions must have an appropriate control framework

There is periodic monitoring of the control framework at recipient institutions, which is carried out by the Finance Division (Review and Investigations), Common Administrative

Services Directorate at NSERC/SSHRC⁴ and by the Finance Division at CIHR. This monitoring is carried out on a rotational basis within a general risk assessment framework. This activity also covers the management of the NCE awards. There is a number of processes to ensure the ongoing monitoring of research programs/projects and post-award administration.

Objectives

The objectives of the visits are to:

- Review the effectiveness of the policies, controls and systems in place at the institutions to ensure that CIHR, NSERC and SSHRC policies and regulations are followed and that research funds are well managed;
- Review the control framework in place at the institution to administer CIHR, NSERC and SSHRC scholarships and fellowships funds and to ensure that these funds are administered according to the Agencies' guidelines;
- Assess if researchers are well supported by Research and Financial Services and have the tools necessary to properly and effectively manage their research funds; and
- Share and disseminate information on guidelines and expectations for financial and scientific accountability and integrity.

Selection process for the visits

A risk-based framework is in place for the selection of recipients for the visits. A 5 year plan is established based on questionnaires completed by the recipient institutions and information gathered by the Review and Investigations unit. The plan is approved by the Executive Committee.

Approximately 12 organizations are visited annually by the Review and Investigations group. On a 5 year cycle all organizations are visited. This represents a cost of \$42,000 annually for the NCE Program.

⁴ NSERC and SSHRC have Common Administrative Services such as the Financial Division, which oversees visits for both granting agencies.

Section 6: Internal Auditing

Each participating agency has its own Internal Audit function. NSERC's internal audit function also covers the NCE Program and its Directorate.

NSERC is currently developing a risk-based long term audit plan for NSERC. This plan will cover a 5 year horizon, starting with 2003-04. The long term audit plan should be completed by December 2002. Under the existing internal audit plan for 2002-03 there is no provisions to conduct an audit of the NCE program given the low risk associated to it.

Long Term Audit Plan

NSERC has developed a detailed risk based audit planning methodology for all its programs. The long term audit plan is being developed in consultation with senior management. It is established based on detailed selection criteria and the review of relevant documents.

Audit Management

All audits will be conducted in accordance with generally accepted audit standards, and in accordance with the current Treasury Board guidance and policy. Audits will be performed by the Senior Internal Auditor, and may include an independent auditor or auditing firm.

Generally audits are conducted in three phases: Planning, Execution and Reporting:

The Planning phase includes an orientation with mandate, definition of the statement of work, gathering of information and documentation, and developing audit program.

The Execution phase consists mainly of undertaking the detailed audit program to gather evidence to support the audit opinion, findings and conclusions.

The Reporting phase involves an analysis of the findings, formulation of opinion, and provides relevant recommendations.

Section 7: Reporting Strategy

The NCE Management Committee oversees the implementation of the RMAF and RBAF and all other reporting requirements. This implies that the NCE Management Committee and staff of the NCE Directorate are responsible for managing adequate data collection, performance reviews and risk-assessment reporting on an on-going basis. Below is a table showing the implementation and reporting dates for 2002.

TABLE 7.1

Activity / Reports	By whom	Date completed
Monitoring of RMAF and RBAF implementation and reporting	NCE Management Committee	Ongoing
Develop definitions and instructions to accompany Annual Tables	NCE Directorate	Feb/March 2002
Develop database and determine data entry and quality control protocols	NCE Directorate/ISD	Spring 2002
1999-00 & 2000-01 Annual Reports submitted to Minister of Industry	NCE Directorate	Spring, 2002
Evaluation Study (every 5 years)	SSHRC/KPMG	June 2002
Submission of RMAF to Treasury Board	NCE Directorate	June, 2002
Submission of RBAF to Treasury Board	NCE Directorate	Sept. 2002
Annual Statistical Tables	Networks	June 30, 2002
Data entry and quality control	NCE Directorate	Summer 2002
Conflict of Interest report	Networks	Sept. 30 2002
Environmental Review reports	Networks	Sept. 30 2002
Annual Corporate Reports	Networks	September 30, 2002
2001-02 Annual Report submitted to Minister of Industry	NCE Directorate	November 2002

NSERC Internal Audit Reports

All NSERC internal audit reports are tabled with the Executive Committee (acts as the Audit Committee) and subject to follow up action by management. Such audit reports, once approved by the Executive Committee will be made available to the public in both official languages. Reports will be made public in keeping with the spirit, intent, and restrictions of the Access to Information and Privacy Acts.