

EXPLORING THE CONNECTIONS BETWEEN ECONOMIC
DEVELOPMENT AND POST-SECONDARY EDUCATION
IN NEWFOUNDLAND AND LABRADOR:
A CASE STUDY

CENTRE FOR NEWFOUNDLAND STUDIES

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POST-SECONDARY EDUCATION IN NEWFOUNDLAND AND LABRADOR:
A CASE STUDY

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A thesis submitted to the School of Graduate Studies in partial fulfillment of the
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Faculty of Education

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Abstract

Research suggests there is a natural connection between economic development and post-secondary education. Post-secondary educational institutions are viewed as sources of highly skilled graduates ready to work in a global economy, places of research and development for the benefit of society, and as meaningful contributors to the community. This thesis explores the nature of the relationship between public post-secondary education and economic development in Newfoundland and Labrador using a case study method. The primary research question is: What role does economic development play in the implementation of the mandates of Memorial University of Newfoundland and College of the North Atlantic?

By using a case study method, the two public post-secondary institutions in the province — College of the North Atlantic and Memorial University of Newfoundland — and the sole federal agency responsible for economic development in the Atlantic region, the Atlantic Canada Opportunities Agency (ACOA), were used as the subjects. Interviews were conducted with 12 senior administrators within the institutions and affiliated arms-length organizations and institutes involved in economic development and/or research and development as well as a representative from the provincial Corporate Services Branch for the Departments of Education and Youth Services and Post-Secondary

Education. Government of Canada documents, such as policy and discussion papers, and literature pertaining to the topic were also analyzed as part of the research.

While the secondary research was used to create a composite overview of the current issues related to economic development and post-secondary education in Canada, the interviews allowed the researcher to probe the nature of the relationship between the two and the issues pertaining to that relationship as it related to the institutions being studied, and to explore possibilities to enhance the relationships.

This case study found that there are real and meaningful connections between economic development and post-secondary education and that the relationships between Memorial University of Newfoundland and College of the North Atlantic with ACOA is a necessary and positive one. However, many of the interviewees noted areas where the relationships could be improved, the result being a more systematic approach to economic development within the two post-secondary institutions.

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Table 1**Interviewees**

Title	Institution	Date
Memorial University of Newfoundland administrator 1	Memorial University of Newfoundland senior official	June, 2000
Memorial University of Newfoundland administrator 2	Memorial University of Newfoundland senior official (dean)	March, 2001
Memorial University of Newfoundland administrator 3	Memorial University of Newfoundland Marine Institute senior official	March, 2001
Memorial University of Newfoundland administrator 4	Memorial University of Newfoundland senior faculty member	March, 2001
Memorial University of Newfoundland administrator 5	Memorial University of Newfoundland official (arms-length organization)	March, 2001
ACOA administrator 1	ACOA senior official	June, 2000
ACOA administrator 2	ACOA senior official	February, 2001
ACOA administrator 3	ACOA senior official	March, 2001
ACOA administrator 4	ACOA senior official	April, 2001
College of the North Atlantic administrator 1	College of the North Atlantic senior official	April, 2001
College of the North Atlantic administrator 2	College of the North Atlantic administrator (regional)	March, 2001

Title	Institution	Date
Government of Newfoundland and Labrador administrator	Corporate Services Branch of the Departments of Youth Services and Post-Secondary Education and Education senior official	April, 2001

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Throughout the research and writing of this thesis my family provided continuous support. My husband, Bud, was always ready to read pieces as I completed them and provided constant encouragement throughout the entire process. My son Jack, although only four when I began this experience, understood that mommy was working on her thesis by the time he was five. Thanks to my supervisor, Dr. Clar Doyle, who provided timely commentary and guidance.

CHAPTER 1 Overview of Study

Introduction

The relationship between post-secondary institutions in Newfoundland and Labrador and the federal agency responsible for economic development in the province — the Atlantic Canada Opportunities Agency (ACOA) — has developed over the Agency's 15-year history. According to ACOA sources, to date, Memorial University of Newfoundland has received nearly \$60 million from the Agency's core programming and through federal-provincial agreements delivered by the Agency. As the only university in a vast geographic area, Memorial University of Newfoundland is viewed by ACOA as a stimulus for economic growth in the Province. As well, the Agency has invested heavily in the College of the North Atlantic's programming in areas where there is potentially a natural connection to economic development.

Cameron (1997) suggests the federal government's involvement in post-secondary education has lacked focus and direction except in the area of research and development (R and D). The establishment of federal research councils has allowed for a systematic approach to the distribution of federal funds for these purposes within the post-secondary environment; however, in cases where universities lack large endowment funds and/or where provincial governments and the business community are not able to

financially support R and D efforts, alternative funding approaches and partnerships are required (Special Senate Committee on Post-Secondary Education, 1997).

In Newfoundland and Labrador, Memorial University of Newfoundland has availed of funding from ACOA as a support mechanism for its R and D efforts. While the Agency's support to College of the North Atlantic has focused primarily on skills development and training, this thesis will explore future possibilities for the Agency and that institution as well.

This case study, building on research work completed in graduate courses, explores the current relationships that exist between public post-secondary institutions in Newfoundland and Labrador and ACOA as they relate to the culture of economic development, with particular emphasis on R and D. The study uses findings from interviews with administrators of the institutions and ACOA, and a review of literature pertaining to R and D and the role of economic development within public post-secondary structures.

Statement of the problem

As a senior communications officer with ACOA for the past four years, the researcher has observed the nature of the Agency's relationship with public post-secondary educational institutions within the province on a day-to-day basis. For the past two years, the researcher has been the sole communications officer at ACOA working on

projects related to the post-secondary institutions being studied here. As well, from June 1995 to September 1997, while employed as a communications officer with Memorial University of Newfoundland, the researcher gained knowledge and a comprehensive understanding of that institution.

ACOA invests heavily in the public post-secondary education system in Newfoundland and Labrador, particularly in the area of R and D and programs that are relevant to industry. As well, the nature of these investments and the connections between economic development and post-secondary education appear not to be well understood. This case study, building on previous research, explores the relationship and connections between public post-secondary education in Newfoundland and Labrador, with a particular emphasis on R and D, and the culture of economic development. It also provides recommendations for an enhanced and more effective relationship between the organizations involved and suggests methods for key stakeholder groups to better understand the nature and importance of these relationships.

Following the completion of this thesis, senior administrators at ACOA, Memorial University of Newfoundland, and College of the North Atlantic may gain a better understanding of the differing perspectives in the area of post-secondary education R and D and their relationship to economic development. As well, the thesis provides recommendations on how the organizations can work effectively to achieve their goals and fulfil their mandates for the benefit of the province. The recommendations made are

suggested ways the institutions studied could work together to create a better understanding of the relationship between them to all key stakeholder groups including: faculty and staff, research councils, the business community, government leaders, and community leaders. Given Prime Minister Jean Chretien's June 29, 2000 announcement of \$700 million for the Atlantic Investment Partnership (Auld, 2000) with its focus on research, development and innovation within post-secondary institutions in Atlantic Canada, and the subsequent roll-out of this new program on June 22, 2001, this piece of research is considered to be very timely (Hoare, 2001).

Research Question

The following primary research question is investigated:

Primary question

What role does economic development, and specifically ACOA, play in the implementation of the mandates of Memorial University of Newfoundland and College of the North Atlantic?

The primary question was asked of all Memorial University of Newfoundland and College of the North Atlantic interviewees in the context of their own organizations. ACOA administrators were asked the question in reverse: What roles do the College of the North Atlantic and Memorial University of Newfoundland play in helping ACOA achieve its mandate?

Secondary questions

Secondary questions included: What is the relationship between ACOA and the College of the North Atlantic? ACOA and Memorial University of Newfoundland? What is the connection between economic development and education? What type of research work is carried out within the institutions being studied? These questions were asked to better understand the interviewees' philosophies about the relationship between economic development and post-secondary education.

Methodology

According to Lee (1999), the case study method works well to generate new theory and is best suited to understanding real-life phenomena where the researcher has little control. Case study research, according to Lee, comprises five main elements. These include: research questions, theoretical propositions, unit of analysis, the logic linking data to these theoretical propositions, and the criteria for evaluating these propositions. These will be examined further in Chapter Three. As well, the use of the case study allows the researcher to examine organizations in a less obtrusive manner than allowed by other types of research. By using the case study method, the researcher has been able to examine the relationship between Memorial University of Newfoundland, College of the North Atlantic and ACOA to generate new theory about the nature of the relationship as it

relates to the culture of economic development within these institutions with a particular emphasis on R and D.

A literature review and document analysis were also employed to help probe and interpret the relationship between economic development and the two public post-secondary institutions in Newfoundland and Labrador. While much of the literature used originated from within the Government of Canada or were documents submitted to, or prepared for, the Government of Canada, it did provide a better understanding of how the Government of Canada has been involved in post-secondary education over the years and future directions being planned.

Key Concepts

A number of concepts appear in this thesis which require definition or clarification. For the purposes of this thesis, **research and development (R and D)** will refer to any and all R and D activity undertaken within the confines of public post-secondary institutions, their institutes and the arms-length organizations affiliated with these institutions within Newfoundland and Labrador that are involved in, or have an interest in, economic development. Research is discussed in a number of ways. **Basic or curiosity-driven research** applies to all research that is intended for the purposes of probing a problem and where there is no emphasis on developing a marketable product. Research undertaken that has direct industry or business relevance or benefit to society is

referred to as **applied research**. The term **innovation** is defined as the process of bringing new products or services to the marketplace, or the result of that process. The **science chain** refers to the structures and processes within research and educational institutions that generate new knowledge. This includes basic research, applied research and commercialization of technology. The knowledge created as a result of R and D work, or the products that result from that work, is termed **intellectual property**.

Federal regional economic development agencies will refer solely to ACOA in Newfoundland and Labrador. As well, **economic development** will refer to activity that creates a climate for business activity or leads directly to business activity. Unless stated otherwise, all references to **Memorial University of Newfoundland** will encompass the Marine Institute of Memorial University.

Overview of Institutions

Memorial University of Newfoundland evolved out of Memorial University College in 1949. The college had been established in 1925 to provide young people in Newfoundland and Labrador with an opportunity to avail of post-secondary education within the Province. In 1949, when Newfoundland and Labrador entered the Canadian federation, one of the first acts of the new provincial government was to elevate the college to a university with degree-granting status (Memorial University of Newfoundland, 2000).

Since 1949 Memorial University of Newfoundland has grown to include faculties and schools in arts, science, education, medicine, engineering and business administration, graduate studies, nursing, physical education and athletics, social work, continuing education, music and pharmacy; and also offers degree programs in fine arts. The university has campuses in St. John's, Corner Brook, Harlow, England, and St. Pierre off the Province's south coast. According to its mission statement and philosophy, the institution is committed to excellence in teaching, research and scholarship, recognizes the special role it plays in educating the people of the Province, conducts research relevant to Newfoundland and Labrador and shares that knowledge with the community (Memorial University of Newfoundland, 2000).

Research at Memorial University of Newfoundland is key to its mission. The institution has keenly developed its strengths in areas where it has a natural affinity, such as ocean and fisheries-related research. As well, given the geographic scope of the institution, Memorial University of Newfoundland has excelled in the areas of distance education and telemedicine. The University's Vice-President of Research is responsible for the support and administration of the University's activities in research (Memorial University of Newfoundland, 2000-2001).

The College of the North Atlantic is Newfoundland and Labrador's only public post-secondary college system. Headquartered on the Province's west coast, the college has nearly 20 locations and functions as the Province's vocational and skills development

centre. The College of the North Atlantic is committed to providing quality learning opportunities that are accessible and responsive and that prepare people to become self-sufficient contributors to social and economic development in a global world. The institution offers programs in a range of disciplines including: applied arts, information technology, engineering technology, natural resources, business studies, health sciences and industrial trades. Courses are available at campuses or through distance and continuing education (College of the North Atlantic, 2000).

The Atlantic Canada Opportunities Agency (ACOA) was established in 1987. It is a pan-Atlantic agency of the Government of Canada dedicated to economic development. Throughout its evolution, ACOA's mandate has remained constant. According to its corporate profile, ACOA exists to help the people of Atlantic Canada build a strong and vibrant economy, to support an environment conducive to entrepreneurial activity, and to contribute to economic capacity. Working with key stakeholders, such as other levels of government, the private sector, and public post-secondary institutions, ACOA attempts to undertake and support activities that are both relevant and tangible to the region (Atlantic Canada Opportunities Agency, 2001a).

ACOA focuses on six strategic sectors: entrepreneurship and business skills development; trade, tourism and investment; innovation and technology, community economic development; access to capital and information, and policy, advocacy and coordination. The Agency operates within the Industry portfolio of the Government of

Canada which includes 13 other departments and agencies all reporting to the Minister of Industry. However, ACOA also has a Minister of State who oversees the Agency's operations. The Minister of State reports to the Minister of Industry. A few of the Agency's responsibilities include the delivery of a Business Development Program which is a lending program to finance business, and delivery and administration of federal-provincial programming. There are four regional vice-presidents, one for each of the Atlantic provinces, three administrative vice-presidents, and a president who operates out of the Agency's head office in Moncton, New Brunswick (Atlantic Canada Opportunities Agency, 2002).

Thesis Design

This thesis is organized by chapter, beginning with Chapter 1 which provides an overview of the study undertaken. Specifically, this chapter includes an introduction to the study, its purpose, a description of the institutions used for the case study, and an overview of the research methodology used to complete the study.

Chapter 2 provides a review and analysis of the literature pertaining to post-secondary education and economic development. Primarily, Government of Canada sources, such as policy and discussion papers, are used to explain and understand the current issues pertaining to the relationship between post-secondary education and federal economic development. Much has been written about R and D work conducted within

post-secondary institutions and its role in economic development. Therefore, Chapter 2 includes a thorough discussion of this topic and ancillary topics such as commercialization of technology and the role of the federal government in post-secondary education. Chapter 3 details the methodology undertaken for this thesis – namely the case study method – and explains why this approach was used. Given that there are only two public post-secondary institutions and one federal agency responsible for economic development in Newfoundland and Labrador, a case study provided an opportunity to probe and explore the topic of the research within these three organizations in a thorough manner.

Chapters 4 and 5 provide analysis of the primary research undertaken and suggest future approaches that could guide the relationship between economic development and post-secondary education. All interviewees noted the importance of ACOA's role in public post-secondary education in Newfoundland and Labrador, but also provided sage commentary about where improvements need to be made. Given that ACOA has invested, and will likely continue to invest, in public post-secondary education in Newfoundland and Labrador, the recommendations suggested for consideration in Chapter 5 may prove useful in ensuring that future funding contributes to meaningful long-term strategic initiatives with potential to impact directly on economic development.

Chapter 2 Literature Review

Types of Literature Reviewed

As outlined in Chapter 1, literature pertaining to the relationship between economic development and post-secondary education is primarily limited to Government of Canada position and policy papers discussing the broader themes relevant to the topic being researched in this thesis. These include concepts such as innovation, research and development, and commercialization of university research. Other literature sources originate from organizations with an interest in the connections between economic development and post-secondary education. These include such groups as the Council of Ministers of Education and the Association of Atlantic Universities.

Federal Perspectives in Post-Secondary Education (Overview)

Cameron (1997) suggests that the federal government's role in post-secondary education has been "schizophrenic" at best. However, given that education is a provincial responsibility, he argues that the federal government has historically found both means, and opportunity, to influence its evolution. While this thesis is not designed to explore all aspects of the federal government's role in post-secondary education, it will examine the Government of Canada's investments in R and D, particularly. According to Cameron, funding for research at universities has remained a primarily federal responsibility since

Confederation. The establishment of research councils such as the Social Sciences and Humanities Research Council (SSHRC), the Natural Sciences and Engineering Research Council (NSERC), the Medical Research Council (MRC) and the Canada Foundation for Innovation (CFI) has helped solidify this fact.

Established by the federal government in 1997 to strengthen the ability of Canada's R and D community to carry out world-class initiatives, CFI manages a \$3.15 billion annual budget (Canada Foundation for Innovation, 2001). NSERC invests \$550 million into Canadian universities yearly. Funding is awarded through a competitive process governed by peer review. Public post-secondary institutions in Newfoundland and Labrador receive approximately 1.6 % of NSERC funding. Sixty per cent of NSERC funding is awarded to institutions in Ontario and Quebec (Natural Sciences and Engineering Research Council, 2001). Governed by a 22-member council which is appointed by government, SSHRC distributes funds to university scholars and researchers through competitive granting programs. Its annual budget of approximately \$156.5 million funds such programs as the Networks of Centres of Excellence and the Canada Research Chairs (Social Sciences and Humanities Research Council, 2001).

According to Cameron (1997), many reports over the years have suggested how the federal government's research dollars should be working; however, he argues that many of these recommendations have not been heard. According to *A Senate Report on Post-Secondary Education in Canada* (1997), granting councils assume that universities

already have the infrastructure in place to undertake research and make no investment in the overhead costs of research in their contributions. Cameron suggests that research granting councils should fund 100 % of the costs associated with the research they support. Today, however, many of the councils require partnership arrangements for research where they support 40 % of the initiative with the remaining funds expected to be generated from other sources (Special Senate Committee on Post-Secondary Education, 1997). For every dollar it spends on a project, NSERC boasts that the private sector or other sources invest almost double that amount (Natural Sciences and Engineering Research Council, 2001). In 2002, the Government of Canada announced that it would support the in-direct costs of doing research at universities across the country. Memorial University of Newfoundland received more than \$3 million towards this effort. In announcing the funding, Minister of State for ACOA, the Honourable Gerry Byrne, noted that the commitment was designed to strengthen the research abilities of the University (Government of Canada, 2002a).

According to Cameron (1997), the federal government has always had a clear vision for its role and responsibility in funding R and D. Today, provinces also recognize their role in funding R and D and appear to better understand the importance of it to economic development. In the 2001 budget, the Government of Newfoundland and Labrador announced \$500,000 to support Memorial University of Newfoundland and

College of the North Atlantic in their bids for funding from national research councils (Government of Newfoundland and Labrador, 2001a).

Another important aspect of Cameron's (1997) assessment is the re-organization of the bureaucracy related to research and development within the federal system. In 1987, the Department of Industry, Science, and Technology was merged with the now defunct Department of Regional Industrial Expansion (which later that year was replaced with ACOA) with a clear mandate to lead the agenda of enhanced economic development competitiveness in Canada. The research granting councils were also included in this new structure (see Appendix I).

In 1999, the Association of Atlantic Universities submitted a report to the federal Liberal Atlantic Caucus titled *The Atlantic Provinces: A Knowledge Economy Dropout?* That report made a number of observations about the Government of Canada's role in post-secondary education. The message in the report was clear: Atlantic Canadian universities must be able to compete with those across the country regardless of the financial situations of their respective provincial governments. The brief recommended that the Government of Canada help Atlantic Canadian universities build upon their existing unique strengths and assets and that it reinvest in higher education generally. The report also suggested that Government of Canada investments in R and D have had a negative impact on the competitiveness of Atlantic Canadian universities given the matching fund requirements of federal research councils and the limited private sector

investment opportunities in the region. In fact, the report goes as far as to suggest that Atlantic Canada is at a disadvantage because of federal policies that focus on a national economic growth agenda that does not realize the financial realities of the regions.

In the 2000 federal budget, research councils received increases in funding to foster the establishment of research chairs at universities across the country (Government of Canada, 2000). In the 2001 Speech from the Throne, the message reiterated the themes of innovation and the need to take the products of research and development and turn them into commercial opportunities (Government of Canada, 2001). As well, in June 2000, the Government of Canada announced \$700 million for a new Atlantic Investment Partnership. This program, being administered by ACOA, became operational on June 22, 2001. One element of the program – the Atlantic Innovation Fund (AIF) – is designed to strengthen the economy of Atlantic Canada through investments in R and D and innovation in Atlantic Canadian public post-secondary institutions and firms. The objectives of the AIF are to contribute to innovation that will lead to economic growth, increase capacity for commercialization, strengthen capacity around innovation by fostering alliances between industry and public post-secondary institutions and maximize benefits from R and D work being done in the area. Eligible applicants include commercial entities, business associations, research institutes and post-secondary institutions (Atlantic Canada Opportunities Agency, 2001b).

Federal Regional Economic Development and Post-Secondary Education

The need for regional economic development agencies has historically been a topic for discourse among policy makers, economists and all levels of government. Criticisms of ACOA are often leveled at the Agency's role in providing direct support to business through non-interest bearing loans. Fenwick (2000a) suggests that ACOA support to business distorts the market and does more harm than good. The premise for this commentary is that billions of dollars are invested into Atlantic Canada with little positive impact on employment and income levels. Furthermore, he suggests that government investments in private-sector ventures cause severe disruptions in the marketplace as it relates to funding and access to employees and that infusions of government funding freeze innovation and turn entrepreneurs into bureaucrats (Fenwick, 2000b).

Since regional economic development is viewed through many lenses, different segments of the population adopt differing points of view. In an August 2001 *Telegram* article (Barron, 2001), Brian Lee Crowley, President of the Atlantic Institute for Market Studies (AIMS), suggested that federal support for universities should flow through departments such as Human Resources Development Canada and Industry Canada and advocated the dismantling of ACOA. AIMS is an independent economic and social policy think tank that conducts research related to economic and public policy issues facing Atlantic Canadians and Canadians more generally. Its research explores the economic and

social characteristics and potentials of Atlantic Canada and its four provinces. AIMS also acts as a stimulus for informed debate with a particular focus on strategies for overcoming Atlantic Canada's economic challenges in terms of regional disparities (Atlantic Institute for Market Studies, 2002).

Rowe (1995) discusses Atlantic Canada's disadvantages as they relate to economic growth and suggests these may be the result of government policy; however, while he supports the arguments against direct support to business from agencies such as ACOA, he suggests there is a role for economic development agencies in other areas of the economy, namely support for universities and research institutes.

In 1995, ACOA consulted with universities in Atlantic Canada to discuss their role in economic development as it related to science and technology. The discussions of the meeting were recorded and a number of recommendations were made (Memorial University of Newfoundland, 1995), including moving universities beyond level playing fields to looking for competitive advantages in research; promoting university-industry collaboration; developing an entrepreneurial focus to research; marketing of research and development; and interestingly, for the purposes of this case study, broadening universities' mandates to include references to their contribution to economic development.

Throughout the past six years, ACOA has been tasked with implementing funding programs from which Memorial University of Newfoundland has benefitted.

These have included earmarked funds through federal-provincial agreements such as the Economic Renewal Agreement and the Comprehensive Economic Development Agreement. Each of these bi-lateral agreements included \$5 million for a Research Infrastructure Fund. The purpose of these funds was to assist the University in its efforts to win CFI funding. Most recently, ACOA was charged with developing and implementing the \$300 million AIF, a program dedicated to increasing Atlantic Canada's innovation capacity.

Provincial Perspectives on Economic Development and Post-Secondary Education

Post-secondary education is a provincial responsibility and, as such, Memorial University of Newfoundland and College of the North Atlantic receive annual operating budgets from the Government of Newfoundland and Labrador. With limited financial resources, the provincial government has not been in a position to invest significant additional funds into post-secondary educational institutions. There have been two notable exceptions. In 1997, then Premier Brian Tobin, at the public launch of the Opportunity Fund fund-raising campaign, committed the Government of Newfoundland and Labrador to match the contributions to Memorial University of Newfoundland dollar for dollar. Ten million dollars of campaign funds were earmarked for R and D activities (Memorial University of Newfoundland, 1997). The Government of Newfoundland and Labrador earmarked \$500,000 in the 2001 Budget for Memorial University of

Newfoundland and College of the North Atlantic to assist them in leveraging additional funds from Government of Canada research councils.

By comparison, the Government of Alberta has established three government-funded research institutions with multi-million dollar annual investments. These include: the Alberta Heritage Foundation for Medical Research with an annual operating budget of \$70 million (Alberta Heritage Foundation for Medical Research, 2001); the Alberta Research Council with an annual operating budget of \$85 million (Alberta Research Council, 2001) and the Alberta Ingenuity Fund, established in 2000, which operates with a \$500 million endowment. This fund promotes the growth of scientific study, research and discovery at Alberta research institutions with a goal of enhancing the quality of life for all Albertans (Alberta Ingenuity Fund, 2000-01).

Other provinces offer similar funding schemes to help their universities and research institutes attract federal funds. The Government of British Columbia's Knowledge Development Fund will invest \$217 million into public post-secondary institutions, teaching hospitals and affiliated non-profit research hospitals over a nine-year period which began in 1998 (Government of British Columbia, 2001). In Saskatchewan, the Innovation and Science Fund offers a similar program (Government of Saskatchewan, 2001). In all cases, the theme of R and D as a means of enhancing quality of life is evident.

During the research phase of this thesis, the Government of Newfoundland and Labrador removed post-secondary education from the Department of Education and paired it with youth services to form a new Department of Youth Services and Post-Secondary Education (Government of Newfoundland and Labrador, 2001b). At the time of writing this thesis, policy documents that could provide detailed rationale for this move and appropriate plans and priorities were not available. An interview with a representative of the Corporate Services Branch of the Departments of Education and Youth Service and Post-Secondary Education did not yield any additional information around the strategy for the move.

Role of College of the North Atlantic and Memorial University of Newfoundland in Economic Development

Since its inception, Memorial University of Newfoundland has been viewed as a key stimulant for economic development in the Province. The University Act (Memorial University of Newfoundland, 2002) states that Memorial will, where and to the full extent that its resources permit, provide instruction that can be of special service to people engaged in such disciplines as fisheries and manufacturing or in the mining, engineering, agricultural, and industrial pursuits of Newfoundland and Labrador. The Act also states that facilities to undertake original research will be available especially in the application of science to the study of fisheries and forestry.

Bindon and Wilson (1997) note that while the traditional requirements of a university are evident in the Act, so too are economic development overtones. As well, the University has, during its history, developed its research base in areas where it has a strong natural foothold, such as ocean and marine sciences to provide R and D services to the local community. Also, it has pioneered the use of distance education and telemedicine to bring many University programs to all areas of its vast geographic scope. Bindon and Wilson suggest that pressure to link economic development with post-secondary education contributed to the Marine Institute becoming a part of Memorial University of Newfoundland in 1991.

Memorial University of Newfoundland has a province-wide responsibility to educate the people of the Province. As well, the University often describes its role in economic development as it relates to its direct impact on the economy. The institution is responsible for infusing more than \$250 million into the provincial economy annually and supports more than 2,300 jobs (Memorial University, 2000-01).

The College of the North Atlantic (2000) views its role as an institution committed to producing graduates who will become self-sufficient contributors to social and economic development in a global context.

This mission reiterates the message of the Fall/Winter 2000 issue of *College Canada* which was dedicated solely to exploring the role of colleges and institutes in economic development. Ivany (2000) suggests that the global economy has forced

colleges to reshape and revitalize their roles in economic development. He outlines five key areas where community colleges can play a major role in this new economic era. These include preparing a skilled labour force to meet anticipated market demand; providing employers with work force education that ties colleges directly to the community; applying research for industry needs; providing business incubation space and services; fostering lifelong learning; and championing the future role of colleges in the economy.

A 1999 report for the Council of Ministers of Education in Canada reiterated some of these roles. *A Report on Public Expectations of Post-secondary Education in Canada* suggests six overarching themes important in this consideration: quality, accessibility, mobility and portability, relevance and responsiveness, research and scholarship, and accountability. In the area of research and scholarship, the report noted that these contribute to Canada's cultural, social and economic development, and health, as well as the development of a highly educated and effective work force, a new generation of researchers and those who can access others' research and the broad education of citizens.

The Association of Universities and Colleges in Canada (2002) suggests that research is an essential complement to teaching within Canadian universities. Scholarly research provides new insights into all aspects of life whether in the arts, sciences or business and provides the basis for knowledge used in teaching and learning.

According to Statistics Canada and the Council of Ministers of Education (2000), the 1990s witnessed increases in the number of students graduating from both high school and university. In fact, the percentage of students completing university studies increased by nearly 10 %. These statistics demonstrate that education continues to be viewed as pivotal to the development of the workforce.

Production of Workforce

The *Senate Report on Post-Secondary Education in Canada* (1997) suggests the role of post-secondary institutions is vital to Canada's growth in the knowledge-based economy. These institutions play a pivotal role both in educating graduates ready to work in the new economy, and in providing opportunities for lifelong learning. The workforce has changed, and the need for public post-secondary education has escalated. According to Gera and Masse (1996), those with little or no education are finding it more and more difficult to obtain employment. Opportunities for those with post-secondary education, particularly university education, grew at an annual rate of almost 4 % between 1990-95, whereas opportunities for those with a high school education actually decreased by 5 % annually. The paper concluded that knowledge and innovation are key to job creation in Canada but that closing the innovation gap would be critical to that success.

Education Indicators in Canada: A report of the Pan-Canadian Indicators Program 1999 (2000) reiterates these trends. Employment rates continued to rise for

those with higher levels of education whereas individuals who did not complete high school were less likely to find full-time employment. Furthermore, both men and women were achieving higher levels of education by 1998 than their 1990 predecessors.

As discussed by Wolfe (1998a) and Langford (1999), knowledge transfer is an important byproduct of university research work. Those engaged in university research as research students and undergraduate students can benefit from the “trickle down” effect of university research, particularly if the results of the research are brought into the classroom environment. The Organization for Economic Cooperation and Development (2001) notes that it is important to identify evidence of such effects and has made a commitment to undertake research in this area in the coming years.

According to Bloom and Grant (2001), Canada’s productivity and ability to innovate have been closely connected with the learning of its people. Furthermore, it has become increasingly difficult to generate economic success without developing a well-educated and healthy workforce (Conference Board of Canada, 2001). The Council of Ministers of Education and Statistics Canada (2000) also support these views.

Research and Development

Given its relatively small cluster of private sector enterprises, Newfoundland and Labrador’s primary base of R and D is conducted and/or funded by Memorial University of Newfoundland and/or the Government of Canada — nearly 85 %. According to

economist Wade Locke (personal communication, February, 2000), this is the opposite of how R and D is funded in central Canada where productivity is high and unemployment is low. In Quebec, the private sector conducts and/or funds more than 60 % of R and D work; in Ontario that percentage rises to more than 70 %. Locke concludes that R and D contributes to productivity and that the conversion of R and D to productivity is lower in areas like Newfoundland and Labrador. He suggests the type of R and D being carried out may be an important link to productivity. However, he cautions that improvements in productivity will not be the solution for economically challenged areas.

According to the Special Senate Committee (1997), federal funding cutbacks in research and development in the 1990s had one positive impact — it created the need for universities to partner and lever additional funds through external sources. This worked well for areas where large sectors of private enterprise existed, such as central Canada; however, this new structure presents a challenge to areas such as Newfoundland and Labrador where the availability of funding partners is limited.

The report cautioned that in many countries where government's face budgetary and deficit problems, R and D is protected and recognized for its importance as a pivotal component of economic progress and social well-being. This is important given the time frame required for R and D to have a long-term impact on the economy. The report argues that it can take decades to build up the expertise and infrastructure needed for long-term

gain, and goes a step further in recommending that the federal government make the long-term commitment required to see this happen.

Gu and Whewell (1999) suggest that R and D expenditures in Canada represent a much smaller component of gross domestic product than in other industrialized countries and, that while universities are undertaking research, and private-public partnering is strong, Canada still has significant gains to make to catch up with its Organization for Economic Co-operation and Development (OECD) partners. University research is cited as being important in economic growth for three key reasons: its general contribution to knowledge in scientific and technical fields; its ability to provide hands-on training for graduates; and, its transferability to the private sector for commercialization purposes.

In 2000, Industry Canada commissioned a report to ascertain the views of Canadian business owners and the general public about the Government of Canada's innovation programs. The purpose of the report was to provide insight into, and advice on, how the Government could better communicate the innovation agenda to those audiences. The study comprised 12 focus group sessions across the country. While awareness of the Government of Canada's innovation agenda was low, participants considered Canada to be an innovative, leading-edge country. Support among participants for investments in innovation was high and they viewed these investments as matters of strategic priority and the responsibility of government. Participants also considered such issues as the "brain-drain" and taxes to be components of the innovation phenomenon.

Investments in post-secondary institutions through R and D funds is one way the Government of Canada suggests it is attempting to deal with the innovation gap and carry out its innovation agenda (Government of Canada, 2001). Beauchesne (2001), however, argues that federal investments in post-secondary education today merely bring the overall investment in the sector to pre-1990s levels before transfer payments to the provinces were reduced. He suggests that government has paid “lip service” to the importance of higher education. In 2002, the federal government launched *Canada's Innovation Strategy* (2002) which recognizes the value of people in a knowledge-based economy and provides a blueprint for building a stronger, more competitive economy. Through a number of initiatives, the Government of Canada proposes to find better ways to create knowledge and bring ideas to the marketplace; find ways to develop, attract and retain the best and the brightest minds; look at ways to improve business and regulatory policies to support innovation; and to find ways to strengthen communities so that they continue to be targets for investment and opportunity. The Strategy notes the important role of knowledge in the global economy and the equally important role of the people who create and use that knowledge.

According to Wolfe (1998a), the process for accountability and measurement of the work being done within post-secondary structures is not clear. He suggests that post-secondary institutions play a vital role in generating new knowledge that can be relevant to the economy. He uses the OECD's science system concept to explain the knowledge-

based economy. According to Wolfe, the OECD science system, which includes post-secondary institutions and research laboratories, contributes to the production of new knowledge, the transmission of that knowledge through education, and, subsequently, the transfer of that knowledge for the benefit of society through innovation.

One challenge for post-secondary institutions is to improve how the products of the science system are measured; this challenge is further exacerbated by the difficulty in measuring the flow of knowledge to the community. Wolfe (1998a) cautions that while the role of the public sector is critical to the development and continuation of innovative behaviour, distinctions must be made between R and D work that contributes to the innovation system and that which does not. He further argues that the funding institutions must consider more than the final product or process in the research; they must also consider the human element, the importance of attracting and retaining top quality researchers to institutions focused on R and D, and they must consider the key linkage between basic and applied research. Wolfe notes that there is a growing concern that the focus on industry-relevant research with short-term gains is eradicating the pool of scientific knowledge gained through basic research crucial in the innovation system.

Langford (1999) argues that the outcomes from research are the key factors which should be considered by policy makers. He suggests that inadequate funding can obliterate any effort to achieve quality outcomes, but that the investment itself is certainly not a measure of the quality of the outcome. Outcomes include such things as knowledge

transfer, the establishment of commercial or not-for profit ventures as a result of a body of knowledge held by a faculty member, consulting work, contract research, spin-off and technology transfer, policy analysis and formation and artistic culture.

Wolfe (1998b) suggests that provinces are best suited to determine the mix of research and other activities within the post-secondary environment. At the same time, given the focus on research and innovation as a means to achieving economic development, he questions the link between post-secondary education research activity and regional economic development strategies. He asks: What is the appropriate link between the two? What is the profile of the institution and is the reputation sufficient to stimulate the economic activity required? These questions are particularly pertinent when provinces are competing with one another for lucrative research funds that will assist them in the development of their research capacity.

With both federal and provincial governments heavily involved in the R and D mandates of post-secondary institutions across the country, Wolfe (1998b) argues that responsibilities, policy issues and jurisdictions for post-secondary research are blurred. As a result, institutions with little capacity to undertake strategic planning related to R and D are left in a reactionary mode. Wolfe also suggests that while the federal government has eroded the core funding base for universities through cutbacks in the social transfer system, it is ironic that the CFI was established to support the infrastructure needed at post-secondary institutions to attract quality researchers. As well, as Beauchesne (2001)

reports, current funding levels from federal sources for post-secondary education are just equal to the total investment made in this sector prior to cuts in provincial transfer payments in the mid-1990s. The Speeches from the Throne for 2000 and 2001 committed additional funds to research and development. New programs, such as the AIF, place significant emphasis on industry or applied research versus basic or curiosity-driven research.

Commercialization of Technology

Gu and Whewell (1999) discuss the increasing need for universities to engage in commercialization activities. As stated in the previous section, they see direct economic benefits from commercialization of university research. Adams (as cited in Gu and Whewell) found the effects of R and D on industry to be important and broad. Pressman et al. (as cited in Gu and Whewell) indicated that significant investments are required for universities to bring research to the commercial stage but that results can take time to realize. The economic statistics, however, regarding commercialization suggest the wait is worth it. Gu and Whewell reference a study completed in the United States and Canada which shows that the economic impact of technology transfer by academic institutions is nearly \$25 billion annually and that it supports more than 200,000 jobs per year. The number of biotechnology firms in Canada is 107, employing more than 5,000 people and generating close to \$1 billion in sales and revenues. Considering these statistics, which

indicate that Canada is realizing just 4 % of the economic gain, Canada will have to enhance its technology transfer if it is to compete with the American levels.

Wolfe (1998a) argues that only a small portion of research conducted within universities has immediate commercial potential. Therefore, it is important to understand the process by which intellectual property can be brought to the marketplace and the limitations therein. The assessment of whether a piece of intellectual property can be commercialized can be costly, and finding the right recipient for the results is crucial. Generally, the pull from the marketplace is more effective than a push from the institution (Canadian Institute for Advanced Research [CIAR], 1996 as cited in Wolfe, 1998a). That being said, one must question the current infusion of funds into R and D by the Government of Canada. As noted by CIAR, funding alone will not achieve results. A survey of 70 major firms in the United States found that proximity played a significant role in determining which firms benefitted economically from innovation based on university research. Firms in close proximity to major centres tend to be the first to apply new research findings and are therefore at an increased advantage over those located away from the source of academic research.

While proximity is one critical element to consider in the ongoing debate related to commercialization of university research and technology, so too are the policies, or lack thereof, within universities that steer that process. In 1998 the Prime Minister of Canada's Advisory Council on Science and Technology established the Expert Panel on

the Commercialization of University Research. The panel's mandate was to present a vision and strategy to ensure Canadians were benefitting economically and socially from public investments in university research. In May 1999, the Panel submitted its report entitled *Public Investments in University Research: Reaping the Benefits*. The main objective of the recommendations contained within the report was to fulfil the mandate the panel had been entrusted with - to increase the return Canadians were receiving from their investments in the research work being carried out within public post-secondary institutions.

The report provides a simple but effective definition of the word innovation which will be applied throughout this document. Innovation means "the process of bringing new goods and services to market, or the result of that process" (Expert Panel on the Commercialization of University Research, 1999, p. 1). While the report focuses solely on this innovation mandate, it recognizes the importance of basic research, reaffirming its role in the science chain.

The report makes a number of observations. One of the most notable is that there is currently no policy in place to protect Canadian interest and investment if intellectual property is generated from research conducted using federal funding sources. This is an area requiring more attention. The report makes six recommendations.

First, it suggests that the federal government should require a definitive commitment from all recipients of federal research funding that they will ensure the

maximum possible benefit to Canada whenever the results of their federally-funded research are used for commercial gain. The Panel argues that ownership of intellectual property by the universities greatly increases its chances for commercialization.

Second, the Panel supports the concept of a clear intellectual property policy outline to be developed by the federal government which would include such things as: requirements for universities to make innovation a key element of their mission statements; denying access to federal funds for those researchers who do not disclose the results of their commercially-potential research; requirements for universities to make reasonable efforts to bring the intellectual property to commercial fruition and maximize the benefits to Canada; options to allow universities to assign intellectual property to firms, if considered necessary; requirements for universities to encourage the participation of small- and medium-sized firms in spin-off companies, where appropriate; and requirements for universities to designate a senior official for innovation and to establish an organizational capacity to carry its innovation agenda. It is the belief of the panel that commercialization offices, once established with adequate staff, would be able to affect the culture within universities. Increased commercialization would lead to increased grants for researchers to do their work, leading to a culture of innovation as a priority for the university community.

A third recommendation in the report is directed towards the federal government's financial commitment to the establishment of university commercialization arms.

Zieminski and Warda (1999) concur with Gu and Whewell (1999) on the economic impact of commercialization; however, they also discuss the important role technology transfer and industry liaison offices play in realizing this impact, and stress the need for adequate resources in these offices. They suggest that, while many universities have these offices, their focus and mandate are often not clear. The Panel (Expert Panel on the Commercialization of University Research, 1999) suggests that the equivalent of 5 % of current university research funds be directed towards strengthening commercialization capacity. A caveat to this recommendation is that only those institutions that have adhered to recommendation number two would be eligible for this funding. Additionally, the institutions would be required to complete annual reports detailing their innovation performance and demonstrating the shared priorities of the institution and its research affiliates. While this commitment to commercialization offices is necessary, the report warns that the human resource pool to carry out the commercialization work is limited and much needs to be done to address this issue.

Human resource issues are evident in the Panel's fourth recommendation as well. To successfully implement the third recommendation, it is important for universities to make a commitment to foster and develop the people with the necessary skills in areas of entrepreneurship, business and technical skills. Further to this recommendation is the suggestion that the climate or conditions for business within the community must also be supportive.

The fifth and sixth recommendations are related to the federal government's commitment to university research. The Panel suggests that the Department of Finance review its tax policies to ensure it supports research-based innovation rather than impedes it and finally that the government increase its investments in university research and resolve situations, as is the case in Newfoundland and Labrador, where federal funding is available, but provincial funding is not.

Summary

The literature reviewed supported the theoretical connections between economic development and post-secondary education. The connection between education levels and employment was identified, as were issues related to funding for R and D activity within universities. Several of the issues identified in the literature also arise in the primary research findings. These include discussions around the type of research that contributes to economic development and the need to fund university commercialization offices to achieve results. Given the significant funds made available to post-secondary institutions for R and D through the myriad of federal funding programs, agencies and granting councils outlined in this chapter, one must consider how these investments are, or should be, contributing to economic development.

While the purpose of this thesis is not to justify the federal expenditure in R and D at post-secondary institutions in Newfoundland and Labrador, it does seek to understand

how these investments are perceived as contributing to economic development. The literature reviewed provided a number of questions that will be explored further in Chapter 4. These questions include: What role does ACOA play in advancing the R and D agendas of public post-secondary institutions in Newfoundland and Labrador? How are the College of the North Atlantic and Memorial University of Newfoundland accountable for the investments they receive from ACOA? How is ACOA accountable for its investments in post-secondary education? Are ACOA's investments in post-secondary education well understood within all three institutions being studied?

Chapter 3 Theoretical Framework and Methodology

Qualitative Research Overview

The case study was employed as the choice of research methodology for the completion of this thesis. According to Stake (1995), qualitative research methods such as case study provide ample opportunity for interpretation. The purpose of this research was to probe and explore the relationship between federal economic development agencies and public post-secondary educational institutions in Newfoundland and Labrador. This exploration lent itself nicely to the case method as there are just two public post-secondary institutions within the province and one federal department mandated to undertake regional economic development activities. As suggested by Merriam (1998), interpretative or qualitative research allows the researcher to gain knowledge and understanding through the process of data collection versus the deduction mode of inquiry.

While deeply descriptive, qualitative research is also flexible and emergent in design. The knowledge gained throughout the process of data collection can lead the researcher in any number of directions (Merriam, 1998). Merriam reiterates Stake's view that the case study method provides more of an opportunity to gain an in-depth understanding of the topic being explored. As suggested by Lee (1999), the case method

allows for the testing of new theory in a less obtrusive manner than other forms of qualitative research. He suggests there are five main components of case study research.

The first element, research questions, was of paramount importance to the case study research undertaken. The structure and composition of the questions determined the type of data collected. The strength of the data can be determined by the strength of the questions asked in the interviews.

The second element, theoretical propositions, was also critical to conducting the case study research effectively. The nature of the theories and research connections posited by the researcher determined who the interviewees would be and the nature and structure of the questions.

The third element, unit of analysis, was important to understand for a number of reasons. First, the unit of analysis or the phenomenon studied, was difficult to isolate. As well, the unit of analysis was not fully identified until the data collection phases had been completed. In this case study, the units of study included the institutions being examined, the individuals responsible for the institutions, the policies governing the institutions, the culture within the institutions and a combination of all of these.

The fourth element, the logic linking the data to these theoretical propositions, suggests that without sufficient data which speaks to the unit of analysis, the theoretical proposition cannot be examined. To understand and explain the data collected, the

researcher must be able to make logical connections between it and the theory being posited in the first place.

The final element of case study research suggested by Lee (1999) is the criteria for evaluating the theoretical propositions. Criteria were developed throughout the course of the data collection which reflects the common themes and categories emerging from the data.

The Research Method

The researcher, according to Merriam (1998), is the principal instrument for both collecting the data and analyzing the data. In the completion of research for this thesis, semi-structured interviews were employed as the primary data gathering tool. Interviews, according to Brown and Dowling (1998), allow the researcher to probe and to prompt the issues because they entail a personal exchange between researcher and subject. According to Lee (1999), semi-structured interviews offer a compromise between those that are structured and unstructured. While the semi-structured interview is normally structured around issues, themes and specific topics, the interviewer is free to pursue other matters as the interview evolves. This approach is extremely important in cases where the purpose of the research is to probe and explore the theory being considered. This was true for this case study as the questions reveal (see Appendices II through V). Lee cautions, however, that strong interviewing skills are critical for the semi-structured interview to

ensure the researcher is able to flow between prepared and free-flowing questions. With a communications background, the researcher has conducted numerous interviews for newspaper style written pieces which have appeared in weekly and daily provincial newspapers and university newspapers as well as facilitated focus groups.

Using a purposive sample, semi-structured interviews were conducted with senior level administrators at Memorial University of Newfoundland, the College of the North Atlantic, ACOA, and Corporate Services for the Departments of Education and Youth Services and Post-Secondary Education. As well, faculty deans and department heads, senior level staff of commercialization and special offices with an interest in economic development at Memorial University of Newfoundland, and College of the North Atlantic administrators were interviewed to provide as complete a picture of the relationship between public post-secondary institutions and federal economic development agencies as possible. See Table I (pp.vi) for a complete list of interviewees. A total of 12 interviews were conducted. Two of the interviews were conducted in 2000 as part of a research project for a graduate course. The interviewees completed a consent form permitting the data gathered from those interviews to be used for this thesis. The remainder of the interviews were conducted between February and May 2001. All interviews were recorded and transcribed verbatim.

The purposive sample allowed for discovery and understanding of the topic (Merriam, 1998). Questions asked of senior administrators ascertained both the policy

and holistic views of the relationship, while faculty deans, regional college administrators, and staff of special offices within the institutions were able to provide both anecdotal and personal information key to effectively exploring and understanding the topic. Interviews were completed until the information gleaned from new interviews began to become redundant. At that point, data analysis was undertaken

According to Memorial University of Newfoundland School of Graduate Studies ethics policy, all interviewees were asked to sign a consent form allowing the information collected through the interviews to be used in the study. Interviewees were informed that the results of the interviews would be reported in a manner that allowed for anonymity. Therefore, transcripts and tapes are not included with this thesis. Appendix VI contains an example of the consent letter used for all interviewees in the research for the thesis and Appendix VII contains a copy of the ethics letter that accompanied the thesis proposal.

Secondary research in the form of a literature review and document analysis was also employed to gain a better understanding of the relationship between federal economic development and post-secondary education, and/or its component parts, i.e., R and D funding. The literature review provided a global perspective on the topic, providing both insight and direction in question development for the interviewees while the documents analyzed provided a historical and policy perspective of the federal government's plans and actions related to the research topic. Multiple approaches to exploring the topic provided more validity than if one approach was used on its own.

Data from the interviews was analyzed and subsequently organized according to themes and categories reflecting the purpose of the research. The literature information and document analysis were organized likewise. This thematic development helped to build a construct from which to logically and systematically explain the findings of the research and to provide recommendations that are grounded in the findings of the research.

Limitations

Due to the inductive nature of qualitative research, generalizations about the relationship between federal regional economic development agencies and public post-secondary educational institutions cannot be drawn from this thesis. As well, given its case study structure, the findings simply provide for a moment in time and are not reflective of the relationship in the future. Given that much of the primary research was conducted between February and May 2001, there is a possibility the information provided may now be redundant. To address this, wherever possible the information obtained through the primary research is explained in the context of more recent information about programs and/or policies, such as those pertaining to AIF and Canada's Innovation Strategy.

Given the limited amount written about the research topic being posited here, access to scholarly articles and books was limited to isolated topics that fell within the

confines of the research topic being probed such as R and D and commercialization of technology within universities. As well, the documents being analyzed were primarily federal government documents or documents presented to the Government of Canada that were designed as either discussion papers or policy documents. This must be understood in the context of government that is subject to change with evolving mandates and foci depending on the political party in power.

The reader must also consider the position of the researcher as a Senior Communications Officer with the Newfoundland and Labrador office of ACOA. Document and primary research is being analyzed with as unbiased an ear as possible to provide an honest perspective on the topic being explored.

Chapter 4 Interview Findings and Discussion

Overview

Chapter Two identified and discussed the issues related to the relationship between economic development and post-secondary education with particular attention to R and D within these institutions across Canada. As the literature demonstrated, research and development funding, production of skilled graduates and commercialization of technology are all key aspects of post-secondary education's contribution to society and economic development.

As discussed in Chapter Three, to gain an appreciation of these issues in Newfoundland and Labrador, semi-structured interviews were conducted with senior level administrators at Memorial University of Newfoundland, its arms-length organizations and institutes such as the Marine Institute, College of the North Atlantic, ACOA in Newfoundland and Labrador, and the Corporate Services Branch of the Departments of Education and Youth Services and Post-Secondary Education. A total of 10 interviews were conducted between February and May 2001. The results of two interviews, which were conducted in May and June 2000, for the purposes of another research project related to the topic provided data for this thesis as well. Permission was granted from the interviewees to include the material in this thesis.

This chapter presents and discusses the findings of these interviews and is organized according to the themes that emerged from the findings. These themes are similar to the main areas discussed in the literature review and reflect the questions posed at the outset of this thesis.

How do Newfoundland and Labrador's Public Post-Secondary Educational Institutions Contribute to Economic Development?

The majority of administrators stated that Memorial University of Newfoundland and College of the North Atlantic have roles to play in economic development. ACOA administrator 1 (Interview, June 2, 2000) stated that "the best thing we do for regional economic development is to produce really bright, well-educated people."

The production of a well-qualified work force is one key economic contribution post-secondary institutions make to society. Other aspects noted were the establishment of a learning culture, the integration of education with the development of society generally, R and D work, and the ability of well-educated people to develop capacity in a region. All administrators noted that education is key to economic success. ACOA administrator 5 noted (Interview, April 5, 2001) that it is often those who are better educated who emerge as community leaders and who can drive economic development in a region.

While all the interviewees agreed that there is a connection between economic development and post-secondary education, their views on the nature and context of that connection was not uniform. When asked how economic development existed within the educational institution, Memorial University of Newfoundland administrator 1 (Interview, June, 2000) indicated that it did not exist as a separate entity, whereas ACOA and College of the North Atlantic administrators suggested the institutions were critical and pivotal parts of the regional economic development process in the province. In fact, College of the North Atlantic administrator 2 (Interview, March 6, 2001) suggested that economic development and post-secondary education were intertwined.

Memorial University of Newfoundland administrator 1 (Interview, June 2000) noted when asked how ACOA complements and/or supplements the university's work: "ACOA functions primarily as a source of funds for us... By virtue of the rules and regulations that ACOA has, with respect to making monies available, it has a very clear steering effect on what we do, and how we do it. So that's the primary interaction."

These findings suggest that College of the North Atlantic administrators see their institution's relationship with ACOA as being key to the implementation of its mandate whereas Memorial University of Newfoundland administrators appear to indicate that the primary interaction is one of receiving funds.

The University is a storehouse of knowledge and technology noted Memorial University of Newfoundland administrator 5 (Interview, March 29, 2001). The University

is usually the place with the “latest and greatest” in equipment that would not otherwise be available to the business community. Access to these services and expertise is a contribution to economic development, he suggests. All faculties, whether they be engineering, business or arts contribute to the university’s role in economic development, said Memorial University of Newfoundland administrator 2 (Interview, March 12, 2001). The work they do and their mandates may be different, but ultimately they can become involved in research work that can impact the economy of Newfoundland and Labrador.

Memorial University of Newfoundland administrator 4 (Interview, March 13, 2001) noted that he is trying to determine the connections between post-secondary education and economic development. He suggests that if they exist, they are more likely a series of disconnections meaning that economic development may be a byproduct of post-secondary education without the institutions necessarily planning for that outcome. While the University is rich in resources, both human and physical, its component parts, i.e, faculties and schools, “never talk to each other.” There are no inherent built-in connections between the resource entities. Therefore, while the University has a role to play in economic development, that role is largely “accidental” and the institution is not particularly connected to the concept of economic development.

Historically, universities generally have been seen as places of higher learning and propagation of research that is primarily curiosity-driven. The relatively new pressure on universities as places where students expect to be trained for the workplace and where

research has relevance and importance to the private sector are new phenomena which are not always embraced by the university's academic community.

Memorial University of Newfoundland administrator 3 (Interview, March 20, 2001) noted that universities have grown up on the strength of individual faculty and their disciplines whereas colleges and technical institutes grew out of a need to support industry and to provide skilled labour which contributes to economic development overall. He suggests that while Memorial University of Newfoundland will articulate its role in economic development as part of its mission, this mission is much more theoretical than actual.

ACOA Initiatives at Memorial University of Newfoundland and College of the North Atlantic

While regional economic development agencies, such as ACOA, may not play a role in determining university curriculum, they can provide support for innovation and community outreach that can be of benefit to students' learning while at university and the community at large according to some of the interviewees. When asked to describe the relationships between ACOA and Memorial University of Newfoundland and ACOA and the College of the North Atlantic, administrators were quick to point to specific projects or activities within the institutions that had received ACOA support and, as they explained, had far-reaching implications in their views.

In their discussions of how an economic development focus exists within the institutions through ACOA's support, interviewees referenced Canadian Centre for Fisheries Innovation (CCFI), Genesis Group, Archeology Outreach Centre, Public Policy Centre, Centres of Excellence at the College of the North Atlantic, Ocean Sciences Centre, P.J. Gardiner Institute, Canadian Centre for Marine Communications, as well as the role of the Research Infrastructure Fund and the AIF.

Memorial University of Newfoundland administrator 3 (Interview, March 20, 2001) noted that ACOA had worked to help grow the marine communications sector through its support for the Canadian Centre for Marine Communications, an entity and sector that did not exist prior to 1989. He also noted that the Marine Institute's capacity in the area of distance education has been significantly enhanced through ACOA's support for web-based and CD-Rom-based course ware.

The Genesis Group, a business incubation facility located at the University's St. John's campus, was referenced by many of the interviewees as one way ACOA works through the University for the benefit of economic development. This organization works with the University community to provide on-site supports for young technology entrepreneurs who are in a position to fast-forward their technologies and their companies in the early stages of their development. ACOA administrator 1 (Interview, June 2000) suggested that by using a mentoring system, this program "strengthens the links between

the University and the external business community.” The end result is a better network from which to achieve success.

The CCFI was noted as an ACOA-funded initiative that serves an important role in the fishing industry. “We try to take some of the educational resources within the institutions and bring them to bear on economic development or sector development,” noted ACOA administrator 4 (Interview, April 5, 2001). Without having a direct role to play in education in Newfoundland and Labrador, he suggests ACOA finds ways to be involved in the post-secondary education field that will contribute to economic development.

ACOA administrators noted that the University is viewed as a natural place to explore and understand emerging sectors such as biotechnology. One of ACOA’s roles and mandates is to grow these sectors, in an effort to move the Atlantic economy away from its historical dependence on natural resources and on to value-added and knowledge intensive sectors. ACOA administrator 1 (Interview, June, 2000) suggests the marine biotechnology sector is one area where ACOA has worked with the University to provide “seed” money for the development of a biotechnology strategy and has partnered with such offices as the Genesis Group to determine how much commercial potential exists in the fledgling industry. In his view, ACOA’s relationship with Memorial University of Newfoundland is critical in this area.

All ACOA and College of the North Atlantic administrators were quick to point out the incremental capacity built through partnerships between them and the private sector. College of the North Atlantic administrator 1 (Interview, April, 2001) noted that ACOA's funding often entices the private sector to collaborate on a project that would not otherwise proceed. Some of the initiatives referenced by the interviewees included the Centres of Excellence established at locations throughout the Province. These include digital animation and music performance in Stephenville, mining technology in Labrador West, distributed learning in Clarenville, and manufacturing technology, and automation and electrical in St. John's. College of the North Atlantic administrator 2 (Interview, March 6, 2001) suggests that each new project builds on the legacy of the ones that go before it. To date, the programs have attracted scholarship funds and students from across the country, thereby contributing to the economy.

Entrepreneurship development, as one of ACOA's key mandates, was also referenced by the interviewees as an area to which the Agency could contribute within the University environment. ACOA administrator 2 (Interview, February, 2001) discussed the Chair in Youth Focused Technological Entrepreneurship, established at Memorial University of Newfoundland's Business School in 2000, which was partially funded by ACOA. "This is a good example of where we've tried [sic] to look at ways of supporting youth coming out of the education sector and into the workforce understanding the

dynamic of that transition, ensuring that the opportunities are available to apply up-to-date technology to entrepreneurship or business start ups.”

ACOA’s policy and advocacy role can also be further enhanced by working through the University said ACOA administrator 1 (Interview, June 2000). He noted that federal and provincial program review processes have resulted in less policy capacity in the region and that Newfoundland and Labrador needs a strong voice to engage in dialogue related to the unique public policy challenges that exist within the Province. ACOA partnered with the Faculty of Arts at Memorial University of Newfoundland to establish a public policy centre whose work can strengthen the collective public policy capacity in the province. The centre, through its research findings, may influence the types of programs with which ACOA becomes involved in the future.

Relevance to the Community

Part of the University’s role according to the primary research is to make itself more relevant to the community in which it operates. Two of the cited examples of projects supported by ACOA demonstrate how the university is doing this. CCFI offers expert assistance in aquaculture, harvesting and processing with a goal of enhancing its clients’ productivity and profitability (Canadian Centre for Fisheries Innovation, 2002). The Centre is an example of how R and D can be brought out into the community, as CCFI’s services are available to anyone looking to find opportunities or to overcome

challenges through science and technology in the fishing industry. Since its inception 12 years ago, CCFI has partnered with research arms at the University to complete work on more than 355 projects in locations around Newfoundland and Labrador, other parts of the country and abroad.

The Archeology Outreach Unit at Memorial University of Newfoundland was referenced as another important tool in making the university relevant to the people of the province. The centre, established with funds from ACOA, is viewed by ACOA administrator 1 (Interview, June 2000) as “a mechanism (by which) people in rural Newfoundland can see the value for the university in real time, in their backyard.” Those communities with an interest in developing their archeological potential can enlist the support of the centre to ensure the integrity of their work. This supports and promotes the tourism industry as many tourists want to see archeology done in real time. According to Memorial University of Newfoundland administrator 1 (Interview, June, 2000), making the university’s research and expertise accessible to the community is one way to help with regional economic development. He suggested solutions such as distance education, visits by faculty, specialized courses and lectures, and translating academic language into language for everyday use as other means of doing this.

In discussions on how the University can be relevant to the community it serves, it was interesting to note that ACOA administrator 1 (Interview, June, 2000) referenced the use of the existing community college structures as a possible vehicle the University

could use. This message was reiterated by College of the North Atlantic administrator 1. While none of the University administrators mentioned such linkages in the interviews, Memorial University of Newfoundland President , Dr. Axel Meisen (2000), discussed the opportunities for collaborating with the College of the North Atlantic in a speech to the St. John's Rotary Club. Again, in order to fully engage in partnerships with College of the North Atlantic, all parties would have to support such activities.

While University administrators cite specific examples of projects which make the institution relevant to the community, both ACOA and College of the North Atlantic administrators note that the College and the Marine Institute exist to be relevant to the community. Both organizations cite their connections to the labour market through the production of skilled graduates, their work with industry on applied research and training programs, and, in the case of College of the North Atlantic, its visibility within the community.

Research and Development

As evidenced in the literature review, the federal government's approach to funding R and D now rests primarily with public-private partnerships. As well, as Locke (personal communication, February, 2000) indicated, the bulk of R and D work conducted in Atlantic Canada is undertaken by universities and not the private sector. Unlike central Canada, where the private sector supports much of the R & D work being

done, Atlantic Canada, according to ACOA administrator 1 (Interview, June, 2000), finds provincial governments that are constrained fiscally, a private sector that is still in the development stage, and universities that, for the most part, do not have significant endowments. Given the restrictions on funding from the national granting councils, ACOA, through its federal-provincial programming, has supported Memorial University of Newfoundland's efforts to secure its share of this national funding source by creating a Research Infrastructure Fund. The University's research efforts contribute to the development of the university's base of expertise in key areas and allow it to access monies that would not otherwise be available. The Office of Research at Memorial generates over \$35 million annually in external research funds, helping to keep people employed and producing technology and information that benefit the people of the province (Memorial University of Newfoundland, 2000-2001). The Marine Institute generates approximately \$10 million in research and training funds annually.

The process by, and manner in which, ACOA contributes to the research agendas of Memorial University of Newfoundland and the College of the North Atlantic were topics of much discussion in the interviews. From ACOA's perspective, and given the Agency's mandate for economic development in the region, all administrators interviewed discussed the importance of providing funding for R and D work within the post-secondary institutions that can lead to economic gain. All administrators defined that type of R and D work as that which is tied to industry or that has commercial potential.

In fact, ACOA sees its ability to bring industry into the funding or partnership arrangement as one of its strengths. ACOA administrator 2 noted: "Our interests are in areas where, within a fairly defined time frame and ideally a short time frame, the research work or initiatives can be brought out to the private sector." (Interview, February, 2001).

ACOA administrator 1 (Interview, June 2000) noted that the Agency is trying to ensure Newfoundland and Labrador receives a better share of national funding sources for R and D within universities. As noted earlier, many of the Government of Canada's funding programs require partnership arrangements to access funds. With Newfoundland and Labrador's relatively small private sector and a cash-strapped provincial government, the support ACOA has provided through its Research Infrastructure Fund has allowed Memorial University of Newfoundland to lever additional funds through the CFI.

"We (the Government of Canada) increasingly recognize the importance of support for a whole innovation chain, support for basic research, applied research and the whole hand-off process from technology transfer out into the community. So the relationship between economic development and universities is absolutely critical. We think there is a pretty important role for universities to play with our support in strengthening the technology transfer process," said ACOA administrator 1 (Interview, June, 2000).

The question then becomes one of what type of research ACOA can, and should, support. According to Memorial University of Newfoundland administrator 5 (Interview, March 29, 2001) the difference between basic and applied research is becoming more and more blurred. He uses the example of biotechnology which moves rapidly from basic to applied applications. In his view, what may start as basic research may not result in a commercial product for 10 or 12 years, but once the product is developed, the commercialization process can begin quickly. "Economic development is not necessarily a product. It may be working on basic research." He suggests that the federal government at a national level has begun to recognize the value of R and D through such instruments as CFI and the millennium chairs. However, he notes that ACOA's perspective is one of economic development which often precludes funding for basic research.

While the Research Infrastructure Fund established through ACOA to help lever CFI funding allowed the Agency to support basic research, Memorial University of Newfoundland administrator 5 argued that \$10 million — the total value of that fund — was not a sufficient amount with which to work. As well, the expectations that the AIF, with its \$300 million budget, would address some of these concerns had not been realized at the time of this interview. It is important to note that at the time of the interview, the AIF guidelines and policies were still being negotiated and it was the interviewee's view that funding for basic research would be excluded from consideration as would projects that did not engage the private sector.

One concern with the AIF involved the requirement to have industry as a partner in every project. Memorial University of Newfoundland administrator 5 (Interview, March 29, 2001) argues that industry is generally dealing with “my problem today” and not necessarily the opportunity for tomorrow. “We don’t have the industry here so you could end up doing little things with small companies that have little problems as opposed to larger opportunities.” His view is that the requirement to collaborate with local industry may prevent the program from achieving its larger-picture objectives.

The guidelines, released in 2001 for the AIF, suggest that funds can be used to lever monies from other sources, such as the CFI, and that public/private partnerships are encouraged but are not an absolute requirement. (Atlantic Canada Opportunities Agency, 2002). It is possible that the concerns raised by stakeholders involved in the consultation process had an impact on the final AIF product.

Memorial University of Newfoundland administrator 4 (Interview, March 13, 2001) noted that ACOA should better define its expectations of projects related to R and D. He suggests the question not often asked is “so what?” meaning what is the ultimate impact of the research. According to the interviewee, the point being noted here is that researchers need to be able to see their research from a practical lens and that there should be an insistence by funding agencies such as ACOA that they see it that way. “In universities, problems are not to be solved, they are to be studied. A problem is a continuing career. If ACOA sees itself as a practical engine of economic development or

enterprise, it has to insist on the practical implications; if there are none, then maybe ACOA should not be involved.”

The interviewee’s statement is based on his view of economic development. No other interview yielded such strong comments. While many administrators at the College of the North Atlantic, the University and ACOA offered ideas as to how the relationship between the organizations could be enhanced, none, including Memorial University of Newfoundland administrator 4, suggested that ACOA step away from its investments in post-secondary education.

While the issue of funding for university research is ongoing, administrators at the College of the North Atlantic and the Marine Institute indicate that their organizations are poised to take advantage of funding programs for applied research and that their organizations are natural places for it to occur. Without the required doctoral credentials, however, institutes and colleges sometimes find themselves unable to compete with universities for much sought after research funding. Memorial University of Newfoundland administrator 3 (Interview, March 20, 2001) noted: “NSERC for example has had a pure esoteric type of research approach and for us (Marine Institute) to come in and place an industry problem on the table and expect our proposal to be reviewed by peers makes it difficult for us to compete.” Therefore, there is a recognition that expertise must be drawn from within the University community to make the institute more competitive for these funds.

College of the North Atlantic administrator 1 agrees. “We have to be jumping up and down on the side lines saying don’t forget about colleges.” The administrator (Interview, April, 2001) noted that colleges constantly have to sell themselves to the research funding sources and policy makers as being able to play a real and meaningful role. “If we want research to be more in line with commercialization opportunities, colleges can play a more significant role.” Two College of the North Atlantic and Marine Institute administrators noted that while universities can be very powerful in soliciting funds, when government or industry want work completed in a short time frame, their organizations are often the ones approached to do it.

Commercialization of Technology

The January 2001 Speech from the Throne states that the Government of Canada will focus on building a world economy driven by innovation, ideas and talents. As part of its innovation agenda, there will be an interest in accelerating Canada’s ability to commercialize research discoveries, turning them into new products and services. These messages were reiterated in *Canada’s Innovation Strategy* (Government of Canada, 2002) launched in 2002.

The commercialization of technology that can contribute to economic development and prosperity is a key issue for ACOA. One way the Agency demonstrates its support for this area is through investments in such organizations as the Genesis

Group (formerly Seabright Corporation) which was established in 1982 to increase the benefits of R and D to the province (Genesis Group, 2002). To date, that organization, which is located on Memorial University of Newfoundland's St. John's campus and partially funded by ACOA, has been responsible for helping establish three companies and provides counselling to numerous faculty regarding their intellectual property or partnerships with industry.

As noted in the literature, there is significant support for the commercialization of technology within universities and, if successful, the dividends can be significant. According to ACOA administrator 1 (Interview, June 2000), investments in organizations like the Genesis Group allow the university to explore and probe new commercial opportunities. The example of the ballooning biotechnology sector was used by that ACOA administrator to elucidate this point. He stated that in the area of biotechnology, there are few private sector enterprises in place in this province, but that the potential of the industry is significant. As an example, fish and fish products could be used in nutraceuticals and pharmaceuticals. "There's a lot of raw material but not a lot of companies." Therefore, ACOA invested in the completion of a biotechnology strategy, undertaken by the Genesis Group, to identify the opportunities.

Capturing the benefits of new technologies and knowledge developed within university structures is a daunting task. Zieminski and Warda (1999) suggest that universities and society need to refocus how they think of knowledge. Innovation policies

in OECD countries stress the importance of knowledge flows versus knowledge production. The conclusion to be drawn from this is that it is no longer acceptable for universities to be looked at simply as sources of knowledge; the knowledge produced must be shared for the benefits of society.

From this perspective, commercialization offices and technology transfer arms at universities have an important role to play. There also must be an understanding of, and appreciation for, the need for pursuing commercialization by the researchers. According to Memorial University of Newfoundland administrator 4 (Interview, March 13, 2001) “universities don’t see themselves as having any responsibility to give the public a return on its investment. There is a whole university elitist culture that allows you to serve that one third community outreach through consulting work, speakers bureaus and the like.”

Given that a significant portion of university research is supported by public funds, whether through NSERC, SSHRC, ACOA or the CFI, “we have a right to expect a return on our investment, ” according to Memorial University of Newfoundland administrator 4 (Interview, March 13, 2001). The Expert Panel on the Commercialization of University Research (1999) also recommended that researchers determine whether their invention, discovery or new idea is to be treated as intellectual property. This protects the rights of researchers to publish their research findings in cases where no commercial value can be gained.

Memorial University of Newfoundland administrator 4 (Interview, March 13, 2001) noted that researchers do not have to compromise their research integrity when they work with industry or allow their work to be commercialized. Memorial University of Newfoundland administrator 5 (Interview, March, 2001) noted that researchers are often keen to see their work serve society but that not all of them are interested in commercial gains for their research. Most times they want to stay involved in the research and collaborate to allow society to benefit from their work.

He cautions that we cannot make academic researchers business people; nor should we want to. "The best thing we can do is to find the ones who are keen to do it (commercialize their technology) and help them do it. The best bet is to take the technology from the other 90 % that want to go back to the laboratory and get it out there on the street."

The Expert Panel on the Commercialization of University Research (1999) made a similar observation, noting that university researchers are not entrepreneurs and do not have an interest in learning how to become entrepreneurs. However, research is an important first element in the innovation chain and, given that the majority of R and D work carried out in Newfoundland and Labrador takes place at Memorial University of Newfoundland, it is imperative that the appropriate benefits accrue to society.

The Expert Panel on the Commercialization of University Research (1999) recommended that universities develop policies dealing with commercialization of

research and that these policies should ensure maximum return on the investments being made in the research endeavour. The AIF call for proposals specifically references the need for proponents to have this type of policy in place before funding through the program will be disbursed (Atlantic Canada Opportunities Agency, 2002).

While policies designed to ensure maximum returns on university research investment will prove helpful in generating a new approach to commercializing university research, it is imperative that commercialization offices be equipped with qualified staff to ensure the process can be completed to bring the product or idea to the marketplace.

“Within technology you have to have people and it is getting harder and harder to find people and get them here. You have to pay them bigger and bigger money,” noted Memorial University of Newfoundland administrator 5 (Interview, March 29, 2001).

“Often people running technology companies don’t understand the technology. We need better business oriented people who also have an understanding of the science because it’s the science they have to sell.”

Entrepreneurial Culture at Memorial University of Newfoundland and College of the North Atlantic

Post-secondary institutions, by their nature, are designed to train individuals for the world of work and/or to impart knowledge about various disciplines. The concept of entrepreneurship within post-secondary structures is a relatively new phenomenon.

As previously discussed, only about 10 % of faculty members within university environments are considered to be entrepreneurial. Commercial and technology transfer arms have been established at many universities to tap into this interest and to take new discoveries from the remaining 90 % and disseminate them to the community. Issues related to commercialization arms, human resource needs and policies related to commercializations have been discussed previously.

According to ACOA administrators, the University is a “fertile feeding ground” for young entrepreneurs interested in new technologies. The Genesis Group is a good example of support to business within the confines of the University according to many of the interviewees. Research shows that young entrepreneurs in Atlantic Canada need help in accessing venture capital. The Genesis Centre (now a part of the Genesis Group) was established at Memorial University of Newfoundland in 1997 to help address this issue. The goal of the Centre is to provide an on-site incubator for technology companies at the University which can benefit from a myriad of supports within the institution. The goal is to “fast forward their technologies and their companies in the early stages of their development,” said ACOA administrator 1 (Interview, June 2000).

He explained that the entrepreneurs gain access to well-established mentors, who are typically ex-patriot Newfoundlanders and Labradorians, and develop business plans ready to approach venture capitalists. According to the research, this type of centre does more than help the company involved, it also helps strengthen the linkage between the

business community and the university which would not likely happen on its own.

Currently, the Genesis Centre accepts only those entrepreneurs whose companies have the potential to raise venture capital and whose technologies and ideas are cutting edge.

Memorial University of Newfoundland administrator 4 (Interview, March 13, 2001) argues that the Genesis Centre's work is important but that more needs to be done to reach the large University community. "A university is a cauldron of innovation, a witches brew of ideas. We have the brightest minds in young people who have nothing to lose. If we can't stimulate that population to behave entrepreneurially then we can forget it for the older population." He argues that the University is its own community and, as such, a need exists to reach students on their "home territory."

The interviewee (Interview, March 13, 2001) argues that hundreds of other entrepreneurial ideas exist at the University that never make it past the idea generator. A project, partially funded by ACOA and announced on November 20, 2001 is the Enterprise and Entrepreneurship Gateway project, which will see interested persons affiliated with Memorial University of Newfoundland guided through the process of starting a business by a coach/facilitator who can help them make the right connections and lead them through that vulnerable early stage of business start up (Faculty of Business Administration, 2002). As Memorial University of Newfoundland administrator 4 explains, "until people act in enterprising ways, we have a charade. We have a whole language to describe that charade — we have round tables and summit meetings and

acronyms to describe the process.” He suggests that attitudinal change does little to affect economic development. What is needed is a shift in behaviour. “We need to focus on creating an environment in which young people are more inclined to do something.”

His view is that once the connections are made within the University community, young people will be in a better position to make choices and to engage in enterprising activity. The administrator suggests that ACOA’s role as a lender of funds to enterprising entrepreneurs fills an important void in the business community. “Banks are not in risk business, they’ll lend you money when you don’t need it. The only group willing to take on high risk ventures is ACOA.”

Planning for Economic Development at Public Post-Secondary Educational Institutions

Many administrators interviewed stressed the need for investments in long-term strategies to achieve economic success. In terms of the ACOA perspective, ACOA administrator 1 (Interview, June 2000) suggested there has been a philosophical shift in the federal government view that “support to universities does, over time, have a big impact on quality of life for Canadians in terms of economic development.” The researcher believes this switch may have been made evident in the 1999, 2000 and 2001 Speeches from the Throne and their subsequent budgets when funding for research councils and innovation was increased.

Nevertheless, given the impact of previous funding cuts to post-secondary education and given the funding partnerships required to access much of this research funding, change is unlikely unless ACOA is able to continue to provide the University with leveraging funds. While nationally both the will and plan appear to be in place, programs other than the AIF are not regionally focused, which makes their application difficult in areas such as Newfoundland and Labrador.

Memorial University of Newfoundland administrator 1 (Interview, June 2000) noted that, in his opinion, “we’re spending too much time trying to make the rules work to fit the objectives rather than thinking about the objectives and putting the rules around them... I think it would be well worth our while if we had some discussions around programs and program characteristics before programs are launched.” This suggests that, while ACOA’s programs allow for funding to the University, it is the view of some senior administrators that existing programs do not seem to fit well with the types of activities the University is undertaking. Given the fact that ACOA is a pan-Atlantic organization and that the AIF is being delivered on a pan-Atlantic basis, discussions regarding program criteria and policy may need to take place at the corporate/head office level. Following the June 2000 announcement of \$300 million for the AIF, ACOA consulted with universities and colleges and the business community across Atlantic Canada about how the program should work and the types of initiatives it would support..

One point noted by many of the interviewees was the lack of strategic planning related to economic development within Memorial University of Newfoundland and College of the North Atlantic. Currently, many of the projects within the institutions where ACOA is a partner are reportedly individual endeavours that are not part of a larger plan. ACOA administrator 2 (Interview, February, 2001) noted that a process for prioritizing projects and a sense of where the University sees itself heading strategically would be helpful. Nevertheless, he recognizes that the university structure, which has individual schools and faculties with their own priorities, may prevent that from ever happening.

At the same time, ACOA administrator 3 (Interview, March 22, 2001) noted that even if the University was in a position to plan which projects it would pursue over the next five years there would still be difficulties as ACOA is subject to budgetary processes and fiscal constraints. The administrator suggests, however, that the process of coming together to discuss where the institutions see themselves in five years and where ACOA sees its investments going would be helpful. The lack of cohesion within the University is a challenge to planning, noted ACOA administrator 4 (Interview, April 5, 2001). "One of the things that remains a challenge is trying to get various parts of the University building on each other to move forward." While he noted that the lack of a plan from the University is a problem, he was quick to point out that he understands the constraints under which the institution has to work.

According to College of the North Atlantic administrator 1 (Interview, May, 2001), that institution is engaged in strategic planning and is in the process of developing a three-year plan. It is expected that this plan will identify potential funding sources for projects being considered, which will allow ACOA an opportunity to plan for its investments in the College over a longer period of time. The administrator also suggested that focus groups to discuss programs and how they might work would prove helpful to that institution and ACOA.

Memorial University of Newfoundland administrator 3 (Interview, March 20, 2001) also noted that more emphasis needs to be placed on planning. He suggested that his organization could do a better job on the articulation of new ideas in order to take advantage of new programs. "We could be meeting more frequently and more purposefully to hold structured discussions on ideas."

At the time of the interview, Memorial University of Newfoundland administrator 1 (Interview, June 2000) noted that economic development happens within the university by virtue of what the university does, but that the institution does not have an entity that looks at regional economic development. In February 2001, however, Memorial University of Newfoundland launched its strategic framework (Memorial University of Newfoundland, 2001)) following two years of consultation. While there are no specific and measurable actions or activities outlined in that framework, there is a philosophical commitment to economic development. As an example, in the discussion of the

university's mission, the document states that the institution will "build linkages that are essential in the recognition, development and diversification of sustainable economic opportunities in our community" (p. 22).

The document also references the further development of the Marine Institute for innovation and entrepreneurial purposes, increasing collaboration and co-ordination within the University, making communities better aware of how they can use the University's capacity, and partnering with organizations such as the College of the North Atlantic, Regional Economic Development Boards¹, the arts community, business community and labour groups.

ACOA Administrator 1 (Interview, June 2000) discussed the need to plan for pan-Atlantic collaborations between universities. He said: "If we're going to be successful in accessing monies coming out of Ottawa — centres of excellence, research chairs — a lot of universities in Atlantic Canada probably lack the critical mass to be able to get one of these on their own. We are going to have to find practical ways for Atlantic universities to partner and be able to put forward credible projects. I think there is a role for ACOA to play as somewhat of an honest broker." It is obvious from this statement that ACOA views itself as a partner with the University in helping it access funds and fulfil its

¹ A group of 20 zonal boards throughout Newfoundland and Labrador mandated to facilitate economic development in their regions (Government of Newfoundland and Labrador, 2002).

mission, thereby helping ACOA achieve its mandate as well. Whether these pan-Atlantic partnerships will happen is a matter of debate. However, given the proximity of Maritime universities, theirs is a logical partnership. Should Memorial University of Newfoundland not engage in these partnerships, it may find itself competing for funds that Maritime consortia and/or central Canadian universities would have a better chance of accessing. The structure of the AIF also promotes these cross-institutional partnerships.

Given the nature of this issue, there may be benefits for Memorial University of Newfoundland and ACOA, and the College of the North Atlantic and ACOA, discussing and, ultimately, devising plans regarding future funding to their respective institutions that looks at the long-term impacts.

Relationship Building

All administrators suggested that the relationships between Memorial University of Newfoundland and ACOA, and the College of the North Atlantic and ACOA are good. According to ACOA administrator 1 (Interview, June 2000) “we have a very practical, straightforward relationship which makes it a lot easier for all parties.” All stressed the need to strengthen and build upon the existing relationship.

Various features of the relationship were discussed by the interviewees. College of the North Atlantic administrators noted that ACOA in Newfoundland and Labrador views that institution as a partner that is open to discussions about projects. “ACOA has seen us

as a valuable player in economic development because of the partnership role we can play. We have our own level of resources that we can bring to bear and they see us as a stable factor in the partnerships,” said College administrator 1 (Interview, May, 2001).

Memorial University of Newfoundland administrator 3 (Interview, March 20, 2001) discussed the important role ACOA played in helping to grow the marine communications sector by partnering with the Marine Institute. He was also complimentary of ACOA’s staff stating: “I think ACOA, in its people, brought a whole new entrepreneurial approach to working with clients. These are outward people who think of clients as customers in the truest sense. They see themselves as an Agency with resources and with ideas.” He suggested that ACOA is a supportive organization that understands its mission and mandate and that, when the ideas are right, ACOA is there to support and partner with the Marine Institute on its projects.

On another level, the administrator suggested that the Marine Institute could do a better job of communicating with ACOA about projects and ideas, and should be taking advantage of the environmental scanning work ACOA’s policy division conducts. He suggested more structured and purposeful meetings would be helpful.

ACOA administrators suggested that relationships with the University and College of the North Atlantic function on many different levels. There are relationships at a senior level between ACOA and the institutions and at the working or project level. For

the most part, these relationships work well according to the College and University administrators as well.

ACOA administrator 2 (Interview, February, 2001) suggested that while there may be a tendency for the institutions to consider ACOA as a source of funds rather than as partners, the Agency works diligently to build an understanding of what it is trying to accomplish, what role it sees for itself and what partners should be brought to the table on a particular project. "What we're trying to do is ensure some long-lasting and tangible benefits through linkages to the private sector."

ACOA administrator 3 (Interview, March 22, 2001) noted that while existing relationships are good, there may be a need to do a better job at the University, in particular, in fostering different types of relationships. "I wonder sometimes if people at the chemistry department know that ACOA exists, and if they know, do they realize the substantial investments ACOA has made at Memorial University of Newfoundland." It was suggested that there may be a need to get inside the institution to make linkages with faculty and staff and to hold meaningful discussions around applied research.

While suggestions to broaden the relationship with individuals within Memorial University of Newfoundland resonated throughout the ACOA interviews, ACOA administrator 4 (Interview, April 5, 2001) noted that it is easier to reach the College of the North Atlantic and that the University administration must work within the confines of being a university which has many parts and competing priorities.

Memorial University of Newfoundland administrator 2 (Interview, March 12, 2001) noted that his faculty's relationship with ACOA was "project centred and specific." This reflects the discussion in the previous section regarding the University's approach to economic development planning. "ACOA has a specific mandate and there are times when we feel we could do things that would ultimately be of value and serve ACOA's long-term goals, but it's difficult for ACOA to take it up because we're too far down the food chain." He suggests that while he understands ACOA's mandate, the average faculty member in the laboratory or classroom may not have an occasion to come to understand it. This may, from time to time, make them feel dissatisfied that ACOA is not supporting their projects.

Given Memorial University of Newfoundland administrator 1's (Interview, June, 2000) comments that "ACOA functions primarily as a source of funds for us," and that, in the short-term, the relationship would be business like, it is clear that Memorial University of Newfoundland's view of ACOA differs from how the ACOA interviewees view their Agency's relationship with the University.

Memorial University of Newfoundland administrators 4 and 5 (Interviews, March 13, 2001 and March 20, 2001) suggested that ACOA does not understand the University and the university does not understand ACOA. One of them suggested that, while there is a lot of mutual respect, there is not enough discussion between ACOA and the University. "There have been basic assumptions about each other. ACOA needs to have the

credibility through its association with the University and Memorial University of Newfoundland needs ACOA money to help it fulfill some of its objectives.”

Memorial University of Newfoundland administrator 5 (Interview, March 29, 2001) noted that ACOA works well when the rules are worked out; however, he cautions that the Agency should be careful not to set up rules that defeat the objectives. “ACOA has been a fabulous help to the University, yet we are just scratching the surface. We need to better understand each other.” He suggested that programs and policy need to work together better to “do more than do things right, you could do the right things.”

The strength of the current relationship between ACOA and the institutions was reiterated by ACOA administrators, the College of the North Atlantic and the Marine Institute. At the University level, there appeared to be more of a philosophical disconnect between the Agency and the institution. The need for more frequent and structured meetings, forums and focus groups was a theme reiterated by all the interviewees regardless of their views of the current relationships.

Getting the Message Out

One of the greatest challenges for ACOA that could be ascertained from the interviews came from several of the administrators who discussed the need to justify or explain ACOA’s investment in post-secondary education as it relates to long-term economic impact on the province. This is not unusual given the expectations in the

community that things need to happen in the immediate term. ACOA administrator 1 (Interview, June 2000) indicated the greatest challenge in regional economic development is patience. "But somehow we've got to convince people that a dollar invested in the University today can bear fruit within rural Newfoundland within a couple of years.... I recognize that we have to do some things that strengthen the relationship to make the University visible to everyone."

ACOA administrator 3 (Interview, March 22, 2001) noted that the institutions and ACOA could do a better job of marketing and promoting the programs and research on which they are partnering both within their own institutions (internal communications) and to the external public (external communications).

Poor internal communications was a common theme throughout the interviews. Several interviewees at the University discussed the impact of poor communications between faculties, schools and staff. ACOA interviewees made similar comments. ACOA administrator 3 (Interview, March 22, 2001) suggested that the Agency does not do an effective job of communicating the work it does with the post-secondary institutions to its own employees and stakeholder groups.

External communication was also a concern for the interviewees. The process by which the institutions make their ACOA-funded programs and services known to the interested stakeholders was unclear. ACOA administrator 3 (Interview, March 22, 2001),

for example, questioned how many small-scale manufacturers were aware of the ACOA-funded Manufacturing Technology Centre and its services.

College of the North Atlantic administrators 1 and 2 noted that ACOA needs to do a better job of educating people about the work it does at post-secondary institutions. One of them (Interview, April, 2001) suggested that without effective promotional strategies that highlight the positive relationship and effective work being completed by the institutions through ACOA's support and partnership, the average citizen is more likely to think of the Agency in terms of its commercial failures than its successes.

Summary

The relationships between ACOA and Memorial University of Newfoundland and College of the North Atlantic are reportedly positive and beneficial for all parties. While many of the administrators interviewed identified weaknesses in the relationships or areas where improvements could be made, none of them suggested that ACOA move away from funding post-secondary education initiatives. Memorial University of Newfoundland administrator 4 (Interview, March 2001) recommended that ACOA reconsider how it funds R and D work within the University and that it require researchers to explain the practical applications of their work; however, he also noted the important role ACOA plays in assisting the University with its mandate.

While the nature of the relationships between ACOA and Memorial University of Newfoundland and ACOA and the Marine Institute and College of the North Atlantic are somewhat different, the research suggests that ACOA serves as an important and necessary source of funds for these public post-secondary institutions in Newfoundland and Labrador. Therefore, it was not anticipated that any of the interviewees would suggest that ACOA cease to provide these funds. At the same time, because of ACOA's keen interest in developing partnership relationships, the interviews suggest that it is imperative that all parties work together to ensure the relationships are as mutually beneficial as possible while achieving maximum economic benefit to the province.

Chapter 5 Implications and Recommendations

Introduction

The previous four chapters have examined the relationship between economic development and post-secondary education by considering the current relationships between ACOA and Memorial University of Newfoundland and ACOA and College of the North Atlantic.

The questions posed throughout the primary research and the responses to these questions were discussed thematically in the previous chapter. Chapter 5 attempts to discuss the questions and their responses in the context of identifying the implications and recommendations for future directions the institutions might take to enhance and improve upon their existing relationships. Appendixes II through V identify the questions asked of the interviewees. The purpose of the questions was to probe the opinions of the administrators in several key areas: the role ACOA plays in the implementation of the mandates of Memorial University of Newfoundland and College of the North Atlantic and vice versa; the relationship between ACOA and the two institutions; the connections between economic development and post-secondary education; and the nature of the R and D work being carried out at Memorial University of Newfoundland and College of the North Atlantic. The latter was included to determine if administrators at ACOA, the College and Memorial University of Newfoundland differed in their opinions of the type

of research that contributed to economic development. The primary research did not provide a uniform answer to this question. Several of the University administrators suggested that all aspects of research contribute to economic development whereas others were more inclined to suggest applied or industry specific research should be touted as the connectivity between economic development and post-secondary education. What follows is a discussion of some options the institutions may consider to address the issues identified in the primary research and discussed in Chapter 4.

Understanding the Relationship

It is clear from the literature and the interview findings that the relationships between Memorial University of Newfoundland and ACOA and the College of the North Atlantic and ACOA seem to be significant and necessary. However, while the Agency has supported the University's activities over the past 15 years, it appears that not all components of Memorial University of Newfoundland views the institution as an economic development tool, or it has not been able to clearly define its function in this area in such a way that it permeates throughout the organization.

The University administrators interviewed generally did not appear to have a clear vision for the institution's role in economic development beyond its direct financial contribution to the economy but were able to articulate aspects of the University's work and identify specific faculties, schools and programs that have an impact on the economic

development of the province. These included the Marine Institute, CCFI, CCMC, the Genesis Group and the Faculty of Business Administration. In all cases, projects and initiatives with a direct link to industry or the community were identified.

As a source of funds, it appears from the interviews with University administrators that some view ACOA as simply a means to an end for university researchers who must complete scholarly work to maintain academic integrity. Until such time that the academic community can understand and appreciate its own role within the paradigm of economic development, change in the way University administrators and faculty view agencies such as ACOA will likely be limited. According to Memorial University of Newfoundland administrator 1 (Interview, June, 2000): “We do not have a clear coordinated approach to economic development even though we were seen by our founders to play that role.” This suggests a need for consultations and discussions both within the University and with ACOA to help define and clarify this function. As one of the University interviewees (Interview, March, 2001) noted, that institution is a series of “disconnections.” He suggests that if economic development happens within the confines of the institution it is more likely to be accidental than planned.

Currently, meetings are held between officials at ACOA, Memorial University of Newfoundland, College of the North Atlantic and their affiliated arms-length organizations and institutes on an ad hoc basis. As noted by the interviews, these meetings are not as structured as they could be. As an example, there are no formal

schedule processes in place that would allow for regular, well-planned meetings which could produce minutes, action items and assist with long-term planning for all three organizations.

Organized Discussions and Meetings

As noted in the primary research, effective communication is a key factor for building on the existing relationships between the three organizations and explaining these relationships to the many and varied stakeholder groups. Several of the Memorial University of Newfoundland administrators, both College of the North Atlantic administrators, and all ACOA administrators noted the importance of communication between their organizations as one way to better articulate the connections between economic development and post-secondary education which was a pivotal aspect of the research.

One possible mechanism to improve communication between the organizations would be to organize structured familiarization discussions between such groups as senior-level administrators, policy-related staff, etc... These could include regular meetings between senior level ACOA officials and revolving departments/faculties at Memorial University of Newfoundland. In the case of the College, the management committee could be engaged in this process with regularly scheduled meetings as well. Once ACOA officials have met with all appropriate stakeholders individually, the

institutions could consider forming an advisory group or committee that could steer future meetings between all three parties. This committee could be chaired by a senior level ACOA Newfoundland and Labrador official and include representation from the College of the North Atlantic management committee and that of Memorial University of Newfoundland and a number of representatives from within the University community.

This type of committee could ensure that the post-secondary community is connected to economic development discussions and communicating with one another and that all stakeholders are aware of new programs and initiatives that can potentially affect them and/or of which they can avail.

Public Forum and Debate

While encouraging greater communication between key individuals at ACOA, Memorial University of Newfoundland and the College of the North Atlantic, is one important step to building on the existing relationship, the interviewees also revealed that external communication, or creating a better awareness among the public of the nature of ACOA's involvement with the post-secondary institutions is also critical to achieving this success.

One option which could be considered to increase public awareness of the relationship between economic development and post-secondary education would include participation in a public forum to discuss this topic. For maximum impact, the forum

could include two key aspects. One would allow key stakeholders to discuss the relationship between economic development and post-secondary education and the second would allow for public input into the discussion. Key stakeholders would include faculty and staff at the three institutions, industry associations involved or interested in the topic, other federal departments, the Government of Newfoundland and Labrador, elected representatives and key interest groups. ACOA could work with the College of the North Atlantic and Memorial University of Newfoundland to organize this forum. This initiative could be undertaken by ACOA and take place within the University environment. Media could be invited to participate and report on the discussions. This type of event would draw attention to the topic of economic development and post-secondary education and engage interested parties in a debate about the relationship between the two. The results from this forum could then be used by the committee to direct its planning, make recommendations to national funding bodies and to steer its own policy development.

United Voices

As noted in both the literature and the primary research, the roles and responsibilities for post-secondary education in the area of economic development are not clear. Cameron (1997) uses the term “schizophrenic” to describe the Government of Canada’s role in post-secondary education. Beauchesne (2001) suggests federal funds for

post-secondary education today merely bring the system back to its pre-1990s funding levels and *The Senate Report on Post-Secondary Education in Canada* (1997) suggests that 1990s cutbacks in post-secondary education brought about one positive change — the need for private sector investment and partners to carry out university activity.

Through the primary research, these issues were further elucidated. Interviewees noted differences in the application of federal funding programs in areas of the country, post-secondary institutional administrators differed in their views of how funding agencies should work with their institutions and all interviewees noted that ACOA's financial contributions to post-secondary education were necessary. These findings suggest that there is still much to do to ensure funding programs meet the needs of the people they are designed to assist and that academic communities need to be open to using new approaches and working with different types of partners to conduct R and D work.

Administrators agreed that ACOA plays an important role for the University in the area of R and D and the commercialization of subsequent products and services. College of the North Atlantic administrators noted that their organization must be considered as a potential client when innovation programs are planned and research funding bodies examined or infused with additional monies. One ACOA administrator noted that putting forward a “voice” to Ottawa of the unique public policy challenges that exist in Newfoundland and Labrador can bring about change. ACOA, Memorial University of

Newfoundland, and the College of the North Atlantic could consider making the case to Ottawa that regional realities must be considered in the development of national programming geared toward post-secondary institutions.

By working through an organized group such as the committee suggested in Section 5.2, there is a greater possibility that programs and research funding bodies operating at a national level would better understand the regional issues, particularly the connections between post-secondary education and economic development in Newfoundland and Labrador .

Accountability and Flexibility

If ACOA is to continue its support to Memorial University of Newfoundland and/or the College of the North Atlantic through special programming, such as the Research Infrastructure Fund, consultations need to be held with the potential users of those funds to determine appropriate policies and criteria prior to the funds being made available. A common concern throughout the interviews with Memorial University of Newfoundland administrators was that once the rules for a program are fixed, it is extremely difficult to change them. It is apparent, that a way needs to be found that can reconcile accountability and flexibility in such a way that important economic development projects within the institutions can occur and that maximum results can be achieved.

As many of the ACOA administrators noted, there appears to be a lack of understanding or awareness of the benefits of the Agency's investments in post-secondary education even though the Government of Canada has publicly stated on many occasions the connections between the two. This, too, affects the Agency's accountability and credibility. As a federal agency, ACOA is accountable to the citizens of Canada; however, measuring the success of projects that typically do not include measureables, such as jobs created or maintained, is difficult. Qualitative measurements through such mechanisms as the thesis research being conducted here may be one method to achieve accountability on these types of projects. Reasons for success or failure cannot simply be counted, they must be probed, analyzed, explored and discussed. Therefore, qualitative measurements would prove to be more beneficial for these purposes.

Liaison Offices

Given the nature of federal funding and federal funding sources from research granting councils, budgetary issues from the Government of Newfoundland and Labrador, and the relatively small private sector base in Newfoundland and Labrador, ACOA's role as both a partner and source of investment funds for post-secondary education remains critical. At the same time, the primary research clearly indicates a need for sustained and regular communication, increased awareness of the relationship between post-secondary education and economic development and clearer roles and responsibilities. While the

steering committee recommended in 5.2 would help to direct the relationships between the three organizations in the future, another option could be to establish liaison offices at each of the institutions with a mandate to ensure day-to-day communication and a continuous communication flow.

Liaison offices at each institution could work together on both the program, policy and communication side of the relationship. These offices could take responsibility for the proposed post-secondary education steering committee. The persons employed in such offices should be informed of their institutions' ongoing activities and plans and be in a position to work with ACOA staff to develop long-term plans and goals for the Agency and the institutions as they relate to the relationship between economic development and post-secondary education. To be effective, these may need to be senior level positions reporting to the appropriate organizational management committees. It is suggested that Memorial University of Newfoundland locate its liaison office within its Office of Research.

Communications Plan

Both Memorial University of Newfoundland and College of the North Atlantic have complementary mandates and missions to ACOA and the primary research suggests that all administrators recognize the need to work together to achieve maximum benefits for the province. The challenge becomes one of clearly defining the next phase of the

relationship and making ACOA's investments in the institutions relevant to the people of Newfoundland and Labrador. A first step in achieving this goal would be to develop a comprehensive communications strategy for each organization that includes specific objectives and activities to achieve this goal. If each organization was promoting its economic development agenda, the message could be communicated more frequently and with a greater possibility of it being heard.

If ACOA is to achieve recognition for its contribution to post-secondary education in Newfoundland and Labrador, and if that contribution is to be well understood, the Agency cannot implement a communications strategy in isolation. ACOA will need to work with and consult the institutions to develop a comprehensive and co-ordinated approach to communication with regard to the economic development/post-secondary education messages which would be beneficial to all parties.

Conclusion

Newfoundland and Labrador is both uniquely disadvantaged and advantaged. Without adequate private sector funds and provincial government funds, public post-secondary institutions must rely primarily on federal funding sources to carry out R and D activities. Historically, ACOA has been able to fill the funding gap and/or contribute to projects within post-secondary education that can have long-lasting economic development impacts.

The current relationship between Memorial University of Newfoundland , College of the North Atlantic and ACOA, according to the primary research appears to be both significant and necessary. However, there are areas of the relationships that can be built upon for greater success. By considering the recommendations in this thesis, the three organizations studied here can potentially work together more effectively and communicate more consistently to achieve their goals and fulfill their mandates.

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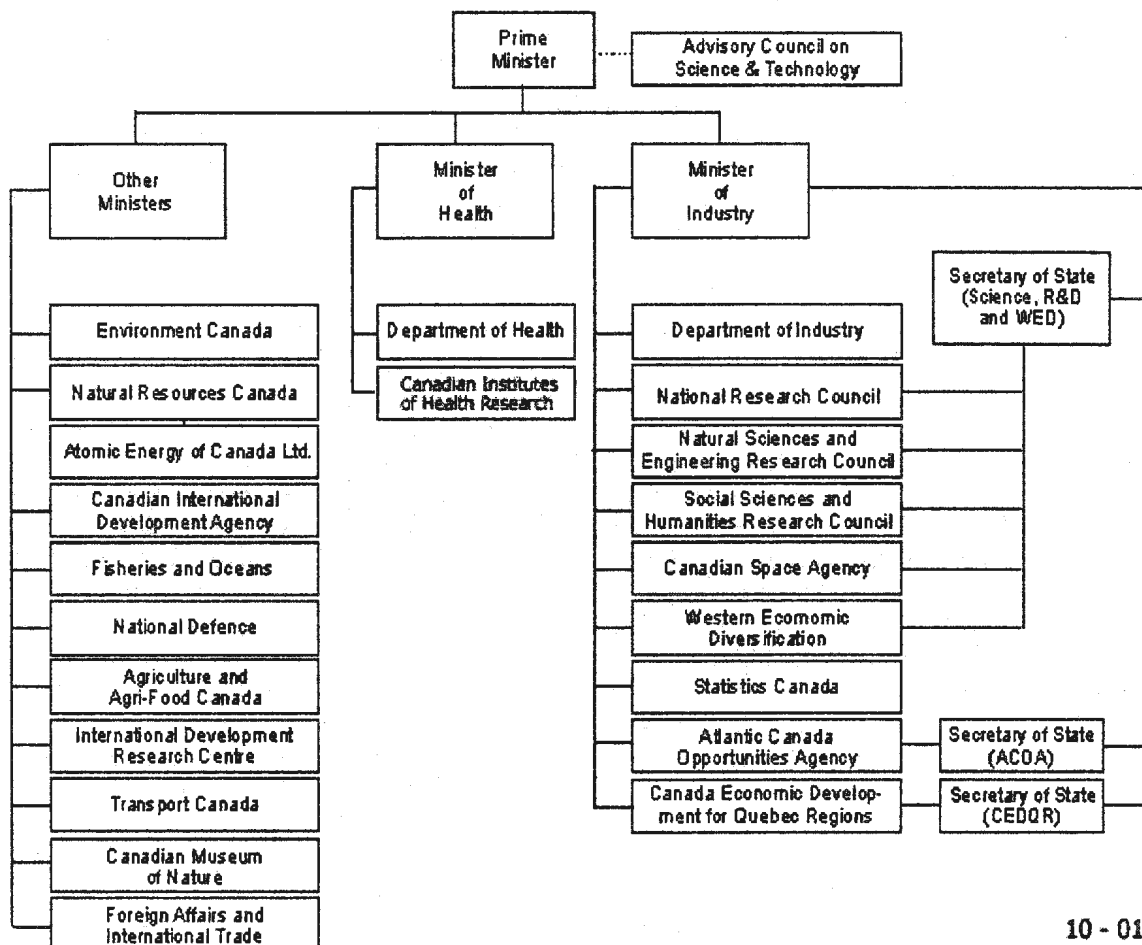
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Appendix I

Federal Government Research Organization Chart



Appendix II

Sample Questions for Post-Secondary Administrators

1. How would you explain the connections between economic development and education?
2. How would you describe the culture within your institution as it relates to economic development?
3. What role does economic development play in the implementation of your institution's mandate/objectives?

(B) Specifically, what role does ACOA play?

3. How would you define the research and development work carried on within your organization?

(B) Specifically, what types of research work are being carried on within your organization?

(C) What percentage of the research and development work carried on within your institution is relevant to industry/business?

4. How would you describe the current relationship between your institution and ACOA?

(B) Please provide examples if possible.

5. What types of steps could be taken to improve upon the existing relationship?

Appendix III

Sample Questions for ACOA Administrators

1. How would you explain the connections between economic development and education?
2. How would you describe the federal government's connection to education as it relates to economic development?
3. What role does post-secondary education play in the implementation of ACOA's mandate/objectives?

(B) Specifically, what roles do Memorial University of Newfoundland and the College play?
3. How would you define the research and development work carried on within Newfoundland and Labrador's public post-secondary institutions?

(B) Specifically, what types of research work are being carried on within these institutions that impact on economic development?

(C) In your opinion, what percentage of the research and development work carried on within these institutions is relevant to industry/business? Is this satisfactory? Why or why not?
4. How would you describe the current relationship between ACOA and Memorial University of Newfoundland? And ACOA and the College?

(B) Please provide examples if possible.
5. What types of steps could be taken to improve upon the existing relationships?

Appendix IV

Sample Questions for Regional College Administrators and Memorial University of Newfoundland Faculty Members

1. How would you explain the connections between economic development and post-secondary education?
2. How would you describe your institution's connection to economic development?
3. In your view, what role does economic development play in the implementation of your organization's mandate/objectives?

(B) Specifically, what role does ACOA play?

3. How would you define the research and development work carried on within your public post-secondary institution?

(B) Specifically, what types of research work are being carried on within your institution that impacts on economic development?

(C) In your opinion, what percentage of the research and development work carried on within your institution is relevant to industry/business? Is this satisfactory? Why or why not?

4. How would you describe the current relationship between ACOA your institution?

(B) Please provide examples if possible.

5. What types of steps could be taken to improve upon the existing relationships?

Appendix V

Sample Questions for Corporate Services Branch, Departments of Education and Youth Services and Post-Secondary Education

1. How would you explain the connections between economic development and post-secondary education?
2. In your view, what role does economic development play in the implementation of the Department of Education's Advanced Studies programmes/budgets?

(B) Specifically, what role does ACOA play?

(C) What role should the federal government play?
3. How would you define the research and development work carried on within public post-secondary institutions in Newfoundland and Labrador?

Appendix VI - Ethics Letter

Part I: Basic Information

1. Principal Investigator:

Victoria Etchegary
Master of Education Candidate
Faculty of Education
Memorial University of Newfoundland
v74vae@mun.ca

2. Title of Research Project:

The culture of economic development at post-secondary institutions: making the connection between academia and economic development - a case study

3. Brief Description of Project:

The case study to be undertaken will explore the relationship between Newfoundland and Labrador's public post-secondary institutions -- Memorial University of Newfoundland and College of the North Atlantic -- with a particular emphasis on research and development, and the federal agency responsible for economic development in Newfoundland and Labrador -- the Atlantic Canada Opportunities Agency. The study will use findings from interviews with administrators of the institutions, and a thorough review of literature pertaining to research and development within post-secondary structures to ascertain the existing relationship. It will also provide recommendations for an enhanced and more effective relationship between the organizations involved and methods for enhancing the understanding of the nature and importance of the relationship to key stakeholder groups. Following the completion of this thesis, senior administrators at both ACOA, Memorial University of Newfoundland, and the College will obtain a better understanding of their differing perspectives in the area of post-secondary education research and development and its relationship to regional economic development. As well, the thesis will provide recommendations on how the three organizations can work together effectively to achieve their goals and fulfil their mandates for the benefit of the province.

Part II: Research Participants

4. Sample of Persons to be Studied:

The research involves interviews with senior administrators at ACOA Newfoundland, Memorial University of Newfoundland, College of the North Atlantic and the Department of Education.. As well, individual faculty members at Memorial University of Newfoundland and local district administrators from the College will be interviewed.

In all cases the interviewees will be asked to sign a letter of consent allowing the information gleaned from the interviews to be used in the thesis. Names will not be used in the final thesis document.

5. Method of Recruitment of Participants:

A purposive sample as per *Part II:1* above will be used to collect data for the thesis. The need for further interviews will be decided upon following the completion of the interviews described. Once the information gleaned from new interviews begins to become redundant data analysis will begin.

6. Treatment of Participants in the Course of the Research:

Interview participants for this thesis research will have an opportunity to refuse to participate at any time. They will be informed of this option at the beginning of each interview. There will be one interviewer for all participants - namely the master's candidate conducting the research. Standards for relations with the interviewees are represented in the Statement of Professional Ethics as established by the Canadian Sociology and Anthropology Association. In all cases, information provided by the interviewees will be used for the purposes of the thesis research only and confidentiality will be ensured.

Materials produced through the research will be forwarded to the Faculty of Education and to each of the interviewees.

Part III: Ethical Concerns

1. Informed Consent:

Interviewees will be approached by telephone or by letter asking them to participate in the research. At that time they will be informed:

- that the objective of the interview is to probe and explore their opinions on the relationship between federal economic development organizations and the province's public post-secondary institutions;
- that they will be asked a number of questions pertaining to this relationship;
- that the interview will take approximately one hour;
- that individual responses will be confidential (interviewees will not be identified by name or title in the thesis document; and
- that they can refuse to participate in the interview or individual questions at any time.

If the person agrees to be interviewed, a time and place will be established. At the time of the interview, the participant will be reminded of the points above.

2. Freedom to Discontinue:

The participants will be informed of this freedom at the initial conduct and at the beginning of the interview.

3. Assessment of Risks:

There are no risks to the interviewees well being or welfare. They are not placed under any stress and are free to discontinue at any time.

4. Post-Research Explanation and/or Debriefing

The research is being completed to fulfill the requirements of the Master of Education at Memorial University of Newfoundland. Each interviewee will be forwarded a copy of the final research document which will include an executive summary.

5. Confidentiality

There is no need to identify individual interviewees, therefore names or identifiers will not be used within the thesis document. Results will only be published as per the requirements of the Faculty of Education.

Signature of Principal Investigator:

Date:

APPENDIX VII
Agreement Form

I consent to serve as a subject in the thesis research study entitled: *"The culture of economic development at post-secondary institutions: making the connection between academia and economic development - a case study."*

I understand that Victoria Etchegary is a student in the master's program at Memorial University of Newfoundland and that this interview is part of the data collection for the completion of her master's thesis. I also understand that Ms. Etchegary is employed with the Atlantic Canada Opportunities Agency.

I understand that my name or identity will not be attached to comments or reports of the study. I understand that the information gleaned from this research will be used for the purposes of the thesis only. I agree to proceed on the understanding that I may withdraw from the study at any time, without reason.

I understand that a copy of the final document will be made available to me at my request. I understand that the tapes being used for interview purposes will be disposed of following their transcription and that the final research document will be published as per the requirements of the Faculty of Education. I understand those senior administrators at each of the institutions being studied will also receive a copy of the final research document.

Signed

(Interviewee)

(Student)

Date

