

International Conference: Globally Competitive, Locally Engaged – Higher Education and Regions

Universities and Community Colleges: Key Contributors to Business Innovation in Atlantic Canada

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Presentation Overview

- Overview of the Region
- Connecting HEIs with business, governments and communities
- Challenges

Statistical Overview of Region



<u>Population</u>	<u>GDP/POP</u>	<u>Net migration</u>	<u>UNRATE</u>	<u>Ave Hour Earnings</u>
<u>April 2007</u>	<u>2006</u>	<u>1981-05</u>	<u>June 2006</u>	<u>2006</u>
Can. 32.9 M	\$44,118		6.3%	\$18.55
NL 506,550	\$48,846 (111%)	-97,000	14.8%	\$18.18
PEI 138,800	\$31,278 (71%)	+1,000	11.0%	\$15.24
NS 932,970	\$34,207 (78%)	-9,000	7.9%	\$17.09
NB 748,880	\$33,811 (77%)	-24,000	8.8%	\$17.27

PSE Presence in Atlantic Canada



PSE's Stimulate Economic Growth

- By hiring people and purchasing local goods and services.
- By educating and training workforce to meet the needs of today's knowledge-based economy.
- By producing research and facilitating innovation and technology transfer.

Canadian colleges and universities make significant contributions to Canada's social well-being and economic growth in their deliberate ways. First and foremost, they contribute directly to the nation's economic performance by educating and graduating highly qualified personnel to meet the increasing needs of the workplace; they expand the boundaries of knowledge in all disciplines through basic and applied research, as they develop concrete solutions to selective challenges of industry and government and they contribute to the economic and social well-being of their surrounding communities.

Canadian Innovation Agenda for the Twenty-First Century Standing Committee on Industry, Science and Technology
Government of Canada (2001)

R & D in Atlantic Canada

- Gross domestic expenditures on R&D 1.3% of GDP in 2003 compared to 2.2% for Canada
- HEI's play a greater role in R&D than rest of Canada
- Private Sector involvement in R&D significantly less than rest of Canada
- Proportional share of revenues from federal granting councils and related programs, although significant, falls well short of national levels.
- AIF fills a gap in innovation funding within the region

Connecting HEIs to business, governments and communities

- **Linkages**
- **Characteristics of areas served by institutions**
- **Engaging stakeholders to determine research focus**
- **Establishing mechanisms to encourage technology transfer and research commercialization**
- **Collaboration with other local and innovation and technology stakeholders**

Examples of Innovation in Support of Business

- **Dr. Gefu Wang-Pruski from Nova Scotia Agricultural College** has identified the genes and proteins that are directly attributed to after-cooking darkening, an undesirable trait that affects the sale of cooked potato products.
- **Dr. David Risk from St. FX University** has invented a milling device for crushing materials to a fine consistency for lab analysis, resulting in significant material collection savings and less cross-contamination.

Wave Power Research in Support of the Aquaculture Industry in Newfoundland



Connecting PSE's to business, governments and communities

- **Key Innovation Enablers**
 - National Level Enablers
 - NRC, NSERC, CIHR, SSHRC, CRC, CFI, Others
 - Regional Level Enablers
 - Provincial Governments
 - ACOA and AIF

Federal Enablers

- **National Research Council**
 - a leader in the development of the knowledge-based economy through science and technology
 - operates a network of research laboratories
 - IRAP helps small and medium-sized enterprises (SMEs) turn good ideas into commercially viable products and services

Federal Enablers

- **Natural Science and Engineering Research Council (NSERC)**
 - supports research in universities and colleges, research training of scientists and engineers, and research-based innovation
 - Funding of approximately \$1.3 billion in various program areas

Regional Enablers

Newfoundland and Labrador

- **Commercialization Program** - It provides financial assistance to private sector enterprises for activities leading to the development of innovative, market-ready products and services, including support for technology transfer activities.

Nova Scotia

- **InNOVAcorp** helps high potential early stage Nova Scotia companies commercialize their technologies and succeed in the global marketplace. Its High Performance Incubation (HPI)(tm) business model, recognized internationally as a "best practice" technology commercialization approach, incorporates incubation infrastructure, business mentoring, and seed and venture capital investment.

Regional Enablers

Prince Edward Island



- This initiative is a series of programs designed to build capacity in research and development innovation by supporting the transformation of ideas into products. The fund is structured to promote research, business and commercial collaborations that complement a growing PEI knowledge-based economy and result in the development of commercially viable, technically innovative, and exportable products and services.

Regional Enablers

• New Brunswick –

- **Technology Adoption and Commercialization Program** The TAC program provides financial assistance for manufacturers, processors and selected services firms in support of technological innovation and pre-commercial product development. The Program is intended to encourage the adoption of improved technologies and processes by offsetting some of the direct costs associated with identifying and securing such technologies and processes.

Regional Enablers

- Atlantic Innovation Fund (AIF)
 - The AIF program is designed to increase research and development and its commercialization.
 - Investments are being made in technology and research facilities including post-secondary institutions, other research institutes and the private sector.
 - The AIF is accelerating the region's transition to a more knowledge-based economy.
 - Within a 10-year period, the AIF will invest \$600 million in R&D projects.

Breakdown of Selected Projects by Sector, Number, and Size

Sector	Number of Projects	Maximum AIF Contribution (\$M)	Total Project Cost (\$M)
Aquaculture	13	30.3	72.5
Biotechnology	20	57.0	122.1
Information Technology	38	99.3	179.8
Environment	10	14.0	33.5
Health/Medical	27	65.3	158.4
Manufacturing/Processing	36	115.6	324.6
Ocean Industries	6	13.1	21.7
Oil and Gas	10	41.9	98.4
Other	1	3.6	7.3
Total	161	440.1	1018.3

General Observations

- Observations from ACOA in terms of results to date from the AIF include:
 - increased project excellence;
 - increased emphasis on commercialization;
 - increased partnerships between HEIs/research organizations and businesses (as well as with each other) (446 since the beginning);
 - new scientists and researchers being attracted to Atlantic Canada;
 - steady increase of approved projects from commercial proponents: from a low of 36% in Round I to a high of 66% in Round IV;

General Observations

- A number of proponents have started to generate revenues from the sale of resulting products; and
- Many projects have experienced some commercialization activity, ranging from patent application to full commercialization;
- Report from Statistics Canada:
 - In October 2006, Statistics Canada reported that R&D is growing in Atlantic Canada and experts are pointing to AIF as a key driver.

Challenges

- Cultivating Industry Partnerships
- Large universities outside Atlantic Canada draw much of the national and international funding
- Increased emphasis for funding to generate commercial success
- Current system of intellectual property ownership

...in the global knowledge-based economy, research-based innovation is of critical importance in generating high value-added economic activity, increased wealth, economic diversification, well-paying jobs...

*Expert Panel on the Commercialization of University Research
Government of Canada (1999)*

Questions?