POLYTECHNICS CANADA

BCIT | CONESTOGA | GEORGE BROWN COLLEGE | HUMBER | NAIT | SAIT POLYTECHNIC | SENECA COLLEGE | SHERIDAN

September 1, 2006

Elizabeth Kingston, Clerk
Standing Committee on Finance
House of Commons
Ottawa
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Executive Summary:

The Challenge

As a society we have become more invested in the notion of the acquisition of knowledge for its own sake versus knowledge and skills to be applied in the workplace, and to the benefit of the Canadian economy. This has resulted in the systemic under valuing of applied learning and chronic under funding of the institutions, such as polytechnics, that provide it.

Similarly, Federal research and development funding policy, agencies and programs of previous governments have tended to focus on basic research and knowledge discovery. In doing so they have ignored applied research that provides solutions to industry problems. The inability to resolve commercial problems including product and/or process improvements, cost avoidance and productivity enhancement contribute to weaker productivity and innovation performance for Canadian businesses, particularly Small and Medium-sized Enterprises (SMEs).

Recommendations

1. **Establish a fund or utilize existing funds to support collaborative initiatives among industry, governments and institutions of applied learning which can provide cross-jurisdictional applied training to workers in response to "crisis sectors" of the economy and thereby facilitate worker mobility.**

2. **Expand Government investment in applied research and technology development towards market-relevant innovation and commercialization.**

3. **Establish an Infrastructure Improvement Fund to help polytechnic institutions address the backlog of deferred maintenance, provide base operational funding for ongoing maintenance, and provide funding for equipment acquisition and replacement.**

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Who We Are

The term polytechnic comes from the Greek πολύ (polú) meaning "many" and τεχνικός (tekhnikós) meaning "arts". We define polytechnic education as the study of knowledge for work delivered in an environment supported by partnerships with business and industry. Students receive hands-on training that enables them to more readily apply skills learned to the workplace.

Polytechnics Canada is an alliance of Canada's eight leading public polytechnic institutions that dedicate resources to applied research, technology transfer, and innovation activities that enhance education and training. Canada's polytechnics represent one of three pillars in Canada's post-secondary education sector, along with universities and colleges. Our member institutions (BCIT, Conestoga College, George Brown College, Humber College, SAIT Polytechnic, Seneca College, Sheridan Institute and NAIT) are located in regions that drive the Canadian economy: The lower Fraser Valley, the Kitchener/Guelph/Waterloo high-tech triangle, the Golden Horseshoe and the Calgary/Edmonton/Tar Sands corridor.

Our members offer full- and part-time degree, diploma, apprenticeship, certification and tailored corporate training programs that enhance the professional skills and effectiveness of over a half-million Canadians each year**.** They prepare career-ready graduates who combine critical thinking with theoretical understanding and practical competence. **Polytechnics Canada is the first national educational association in Canada to strive to provide the complete transferability of credits between members.**

All **Polytechnics Canada** members offer:

- Four-year applied Bachelor degrees (to the Master's level at BCIT)
- Joint Bachelor degrees with universities
- Diplomas at the technologist and technician levels
- Apprenticeship programs
- Post-graduate certificates
- Continuing Education programs
- Post-secondary certificate courses
- Specialized corporate and government training
- Online learning and distance education
- Solutions for industry through applied research

Polytechnics Canada members develop curriculum through Program Advisory Committees (PACs) composed of employers, practitioners and recent program graduates. The committees advise the Board of Governors of the member institutions with regard to the development of new programs, effectiveness of existing programs and community acceptance of polytechnic programs.

Applied Degree curricula are guided by industry and include experiential components developed with industry. To ensure rigorous academic quality, the provincial ministries of education determine what institutions are allowed to offer applied degrees.

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What We Do

Members of **Polytechnics Canada** contribute to Canada's competitiveness by:

Growing Canada's Highly Skilled Workforce

- adding 36,000 graduates annually
- offering 59 new degree programs each developed through a panel of business and industry leaders

Raising the skills and productivity of the current workforce

- 380,000 annually through continuing education and corporate training
- taught by 10,000 faculty, half of whom currently work in industry

Training apprentices

- 21,000

Enhancing workforce mobility

- by a cross-country acceptance of academic credits and credentials

Exporting polytechnic education

- has grown 45% in 4 years
- brings over $1/4 billion into the Canadian economy each year

Cooperate with industry to innovate

- commercialization
- process improvements
- industry problem solving

Polytechnics Canada members share an extensive track record in applied research and in fostering research partnerships with industry. They conduct applied research based on industry needs aimed at specific commercial objectives. Our member institutions deliver maximum return on investment for business, industry and government by accelerating knowledge transfer and putting research into practice.

Through its members' joint lab facilities, networks, and specialists; **Polytechnics Canada** is playing a growing role in Canada and internationally in all phases of applied research and development activities including:

- Proof of Concept
- Prototyping
- Design
- Testing
- Product Development
- Pre-Commercialization
- Commercialization
- Market Testing and Product Validation
- Applied Social Science and Skills Assessment Investigations
- Training of high quality personnel

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Question 1

What specific federal tax and/or program spending measures should be implemented in the upcoming budget to ensure that our citizens are healthy, have the right skills, etc. for their own benefit and for the benefit of their employers?

We can appreciate that members of the Finance Standing Committee are well aware of the labour and skills shortages that our country is facing. Canada's future competitive position depends on its ability to convert knowledge into marketable products, people, services and processes. Integral to achieving this is investment in human capital – our people. In the labour force of the 21st century, well-educated and trained knowledge workers are the "new natural resource". We need to work smarter and harder than the global competition; otherwise the investment dollars will go where there are less labour costs and higher rates of return.

Unfortunately, as a society we are more invested in the notion of university-based post-secondary education with its emphasis on the acquisition of knowledge for its own sake versus knowledge and skills to be applied in the workplace, and to the benefit of the Canadian economy. We have moved from a society that saw a university education as an option to one where it is seen as the only option.

If we do not change our current collective attitude towards the critical role played by polytechnics in applied learning and research we risk damaging the well-being of Canadians by vacating the field to those economies that have made applied education and training integral to their strategic direction.

Solutions

3. **Develop a national people and skills strategy in consultation with representatives from business, labour, government, polytechnics, colleges and universities which addresses how Canada can differentiate itself in competitive world markets and implement the programming to guarantee we have the skilled workforce to be successful in selected sectors.**

4. **Establish a national standards network to facilitate both a national credit transfer system to serve the mobile population, and prior learning and recognition standards (PLAR), to enable adult learners to fast-track their learning requirements and their credential opportunities.**

5. **Create a national model for obtaining, cataloguing and distributing current and relevant labour market data to facilitate better co-ordination among governments, employers and institutions in identifying and providing knowledge skills needed to meet market demands.**

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6. **De-link Labour Market Development Agreement eligibility from Employment Insurance eligibility to allow workers, other than the unemployed, to get greater access to training funds.**

7. **Establish a fund or utilize existing funds to support collaborative initiatives among industry, governments and institutions of applied learning which can provide cross-jurisdictional applied training to workers in response to "crisis sectors" of the economy and thereby facilitate worker mobility.**

8. **Provide tax incentives to small and medium sized businesses who partner with institutions of applied learning to provide skilled knowledge training in response to "crisis" sectors of the economy and adopt successful initiatives in other regions and sectors where skills shortages exist.**

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Question 2

What specific federal tax and/or program spending measures should be implemented in the upcoming budget to ensure that our businesses are competitive?

As has been acknowledged in the final report of the Expert Panel on Commercialization "People and Excellence: The Heart of Successful Commercialization," Canada needs to leverage the relationship between industry needs and research to become more productive and thus competitive.

Federal research and development funding policy, agencies and programs of previous governments have tended to focus on basic research and knowledge discovery. Similarly, commercialization has been viewed as a process that takes research discoveries and turns them, through technology transfer, into new companies which will eventually grow into economic powerhouses.

While transferring or licensing a new discovery to create a fresh start up company is an important element of commercialization, it ignores another critical component: applied research that provides solutions to industry problems. The inability to resolve commercial problems including product and/or process improvements, cost avoidance and productivity enhancement contribute to weaker productivity and innovation performance for Canadian businesses, particularly Small and Medium-sized Enterprises (SMEs).

SMEs, as reported in a recent survey by Industry Canada (Key Small Business Statistics – July, 2006), scored lower than large firms in all measures of involvement in innovative activities, novelty of the innovation, rate of collaboration, use of intellectual property rights and use of government support.

SMEs identified economic challenges as the main obstacle to innovating as well as a lack of market information and qualified staff.

To improve its competitiveness Canada needs to invest in a comprehensive commercialization strategy that responds to industry problems and delivers positive commercial outcomes. This means supporting collaboration between industry, especially SMEs, and those institutions that have industry relationships, commercially experienced faculty and the technical program graduates able to convert innovation into commercial products, services and processes.

A major portion of research at polytechnics is aimed at applications and problem solving, often in collaboration with existing enterprises or in response to commercial needs, and with associated skills development benefits. Notwithstanding this expertise, polytechnics have had limited success in obtaining research funds from federal research and development agencies for applied research and technology development. Canada's investment in commercialization must, therefore, be expanded to support applied

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research and take it to the completion stage of converting industry problems to market solutions.

Solutions

1. **Expand Government investment in applied research and technology development towards market-relevant innovation and commercialization by funding:**

   - **capacity development for polytechnics so that they can allocate a greater proportion of staff time and institutional resources towards applied research activities;**

   - **applied research projects where the criteria for project selection and accountability are based on research competence, commercial interest and economic outcomes; and**

   - **Commercialization Chairs in polytechnic institutions across the country to foster collaboration between industry and post-secondary institutions and provide targeted applied research and rapid technology transfer in response to industry challenges.**

2. **Develop a SME-research strategy to help SMEs increase their competitive position that includes research and development tax incentives for conducting research in collaboration with polytechnics.**

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Question 3

What specific federal tax and/or program spending measures should be implemented to ensure that our nation has the infrastructure required by citizens and businesses?

Over the last 13 years, federal and provincial transfer funding for post-secondary education has been dramatically reduced while federal research dollars have increased.

Unfortunately, even though they are the third pillar of post-secondary education in Canada, polytechnic institutions have not generally benefited from the increased tax dollars for research and as such face chronic under funding for the requisite education and research infrastructure. Polytechnics need predictable and adequate core funding for basic operating and infrastructure investment.

Today's learners have become accustomed to emerging technologies that have transformed how and where they learn. Our challenge is to provide the appropriate learning infrastructure which embraces and leverages to our collective advantage new ways and forums of learning.

Solutions

1. **Apportion public federal funds for post-secondary education in a manner that supports the critical role that polytechnics play in applied learning and research.**

2. **Establish an Infrastructure Improvement Fund to help polytechnic institutions address the backlog of deferred maintenance, provide base operational funding for ongoing maintenance, and provide funding for equipment acquisition and replacement.**

3. **Invest in a national e-learning infrastructure both in delivery and content, to allow increased access for adult learners, particularly in areas of skills shortages.**

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Question 4

What specific federal actions should be taken to ensure that the government is able to afford the tax and/or spending measures needed to ensure that Canada's citizens and businesses can prosper in the world of the future?

Solutions

1. **Correlate our national training expenditures with the needs of industry by instituting better job market planning.**

2. **Rationalize our research investment so that we are producing the products, services and people that the global marketplace wants.**

3. **Focus training investments on those institutions and programs that have the capacity to train skilled knowledge workers cross-jurisdictionally and are closest to the regions that drive the Canadian economy.**

4. **Focus tax credits on partnerships between SMEs and institutions that are providing workplace training in the sectors where there are clearly identified needs and adopt successful initiatives in other regions and sectors where there are skill shortages.**

All of which is respectfully submitted on behalf of Polytechnics Canada

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