



Sharpening Canada's Competitive Edge
Competition Policy Review Panel
Online submission
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Polytechnics Canada is an alliance of seven large, internationally recognized post-secondary institutions committed to producing career-ready graduates who combine critical thinking with theoretical understanding and practical competence. The seven members are located in regions that drive the Canadian economy: The lower Fraser Valley, the Calgary/Tar Sands corridor, the Golden Horseshoe and the Kitchener/Guelph/Waterloo high-tech triangle.

Collectively, the seven members - BCIT, SAIT Polytechnic, Conestoga College, George Brown College, Humber College, Sheridan Institute and Seneca College – annually educate more than 500,000 highly-qualified people essential to Canada's economy by offering an array of credentials including applied bachelor degrees, diplomas, apprenticeships, certificates, post-graduate offerings, continuing education and corporate training, across a wide range of fields.

Distinctive to them is their ability to provide pathways from degrees to specialized certificates or from diplomas to degrees allowing students, regardless of where they are in the education continuum, to upgrade their credentials in response to industry needs.

Integral to polytechnic education is the opportunity given to students to participate in applied research and commercialization projects. The applied research conducted at these institutions is driven by the need to solve industry problems. Because of this it achieves two goals: the transfer of technical and technological knowledge needed in today's workplace and the resolution of industry problems leading to commercialization.

The fundamental task of the Competition Policy Review Panel is to provide recommendations to the government on how to enhance Canadian productivity and competitiveness, as these are keys to generating wealth and creating jobs and opportunity in a fast-changing global economic environment. Through their long-standing mix of applied education and applied research, the member institutions of Polytechnics Canada feel they are uniquely positioned to assist in improving Canada's competitiveness.

Among OECD countries, Canada has the highest proportion of its working-age population who are post-secondary graduates, but foreign companies competing with Canadian enterprises have a labour pool with more depth and breadth. China and other developing societies have identified education as a priority development strategy. Barring exceptional circumstances, Canada's educational advantage will erode rapidly over the next decade, at least with respect to the proportion of those educated.

Canada's response to rising competitive pressures should focus on established strengths in the polytechnics and take them to an advanced level. Canada, with a small population, cannot increase its educational edge merely with the weight of numbers, so it

must emphasize the excellence of its graduates and the precision and quality of their education. Polytechnics are best positioned to respond with the level of advanced skills that the global economy demands.

Canada's polytechnics are playing a unique and indispensable role in guarding and extending Canada's export competitiveness by ensuring that Canada's labour force remains one of the best educated on earth and that it is being educated in a way that most closely meets the requirements of the future. With their strategic focus on technical and business skills and their sensitivity to marketplace needs, the polytechnics are unique in their ability to respond quickly to the ever-shifting need for advanced forms of applied education.

As the Panel's mandate is to provide recommendations to the government on how to establish the domestic conditions that both encourage Canadian firms to be active and aggressive investors at home and abroad, this submission will detail how Polytechnics Canada's member institutions are contributing to the four broad themes identified by the Panel: Investment policies, competition policies, outward investment by Canadians, and Canada as a destination for investment and opportunity.

Investment policies

It has long been recognized that foreign direct investment (FDI) brings benefits to Canada through new sources of capital, ideas and know-how. As well, direct investment by Canadian firms in foreign markets enables them to be more productive and competitive and, ultimately, to create more and better jobs in Canada.

The only sustainable way to increase the diversification of our export base is to increase Canada's educational advantage. When uncontrollable circumstances cause other export advantages to fade, the education and skill set of Canadians remains firmly within Canada's power to improve. Canada's competitors, including India, China and Ireland have used education to create or increase their export advantage. China is massively increasing its educational facilities as part of its strategy to advance its economic strength and export power.

The polytechnics are already positioned to play a central role in this effort to take Canada's education strength to a higher level by:

- Increasing the content and length of their programs and offering programs that lead to applied bachelor degrees
- Increasing and strengthening their applied-research activities in order to attract and develop the calibre of faculty necessary for more sophisticated programs of study.
- Concentrating their efforts on exactly those skills that underpin global competitive success; technical and business skills. Indeed, more than 60 percent of the graduates from polytechnics are in these two key areas. And almost all of their degree programs are either in technology or business
- Improving relationships with Canadian enterprises. This gives them an intimate and immediate understanding of the ever-shifting needs of the marketplace.

Canadian businesses are facing increased competition from the emerging economies of China and India. These countries have large and deep pools of talent from which to

draw. Canada has a smaller workforce which means our competitive position will be eroded if we do not invest in skilled and knowledgeable workers. We need to work smarter and harder than the global competition by equipping our people with the education and training required to meet the demands of the global marketplace.

Unfortunately, as a society we have become more invested in acquiring knowledge for its own sake versus acquiring knowledge and skills to be applied in the workplace. We have made a disproportionate investment in post-secondary theoretical education versus applied education and have failed to address systemic perceptions that undervalue the critical contribution of applied learning and research to sustaining and growing our economy

Our collective failure to adequately value and invest in applied learning has contributed to the unemployment of 1.14 million people including immigrants with inadequate language training and poor credential recognition, workers who have been consigned to low paying jobs with no opportunity to improve their skills and knowledge because they neither have the time nor money and aboriginal peoples that have yet to experience the benefits of education and skills policies. It is also contributing to our inability to fully embrace current market opportunities in key regions of our country such as British Columbia and Alberta.

Canadian PSE and training should be improved by creating a higher level of market relevant skills (both hard and soft) for a larger number of Canadians. Governments and the broader public must endorse the concept that applied learning from apprenticeships to applied bachelor degrees is essential to providing the skilled personnel to sustain our economic infrastructure. We need to recognize and value different forms of education as being distinct but no less important. PSE and training should combine critical thinking with theoretical understanding and practical competence and be more responsive to market demand.

Systemic barriers exist in Canada's post-secondary education system. Members of Polytechnics Canada which operate in three provincial jurisdictions (Ontario, Alberta and British Columbia) are legally authorized to offer bachelor degree programs which meet the rigorous standards of each province's quality assurance agencies. The offering of applied bachelor degrees in BC, Alberta and Ontario is a signal that there is a demand for more career-focused credentials. Notwithstanding the obvious market demand and public scrutiny, graduates from these programs continue to encounter obstacles when they either want to transfer to a university or pursue graduate studies, outside their jurisdiction. The absence of a national accreditation process has resulted in certain institutions denying admission on the basis of non-membership in an advocacy organization. We are closing doors rather than opening them.

Canada's future prosperity is being jeopardized because it is not equipping enough Canadians with the increasingly complex and knowledge-based skills being demanded by Canadian employers to compete in the global economy.

Over the last 13 years, federal and provincial transfer funding for post-secondary education has been dramatically reduced while federal research dollars have increased. Federal government expenditures on research continue to favour basic research over applied research. Since polytechnics carry out applied research, they have not benefited

from the increased tax dollars for basic research and as such face chronic under funding for the requisite education and training infrastructure.

Therefore, polytechnics are unable to meet the demand from SMEs for research-ready graduates who bring the technical and applied educational experience necessary to mobilize innovation in these critical companies.

Polytechnics Canada recommends that the federal government expand its investment in career-ready graduates who are essential in today's global economy by:

- Establishing a dedicated fund of \$1.5 billion for teaching related infrastructure and deferred and ongoing maintenance at polytechnics.
- Creating a dedicated federal-provincial transfer for post-secondary education separate from the Canada Social Transfer and increasing funding for core operating costs of post-secondary education.
- Investing in collaborative initiatives among government, industry and polytechnics to facilitate a cross-jurisdictional response to national skills shortages.

Competition policies

Polytechnics Canada has no comment on competition policies as that is not an area we are working in.

Outward investment by Canadians

A fundamental element of economic competitiveness is the ability of a nation's firms to capitalize on economic opportunities that arise outside its national borders. With our small domestic market, Canada must look outward. In an increasingly globalized economy, our greatest advantage is our people.

Canada, unique in the top 30 OECD countries, does not have a national education strategy supported by a national credential framework and accreditation system. The absence of a national strategy and the mechanisms necessary to facilitate better access, responsiveness and accountability puts Canada at an economic disadvantage in the global knowledge economy.

A large segment of those graduating with post-secondary credentials are doing so from institutes which offer applied business/technological and applied research skills to their students. Although there are three publicly-funded providers of post-secondary education in Canada -polytechnics, community colleges, and universities – there is limited transferability among them, inadequate prior learning assessment arrangements and in some cases systemic resistance to recognizing a wide array of credentials and pathways to post-secondary education.

Polytechnics Canada recommends that the federal government:

- Develop, in collaboration with provincial and territorial governments, a national education and training strategy which establishes common goals and objectives

- for post-secondary education and provides strategies that would best serve the interests of learners, society and the economy.
- Establish, in collaboration with provincial and territorial governments, national mechanisms to measure the effectiveness of Canada's national education system.
- Encourage and support the development and design of a national credentials framework and accreditation system to enhance and facilitate the national transferability of credits, encourage student mobility and increase international recognition

Canada as a destination for investment and opportunity

A key aim for any country in the global arena is to be a preferred location for the capital, talent and innovative activity that drive the modern economy. Canada is no different; however, insufficient federal investment has been made in applied research thus contributing to Canada's poor commercialization performance.

Federal funding and policy for research and development, its granting councils and programs have historically focused on basic research and knowledge discovery. In the most recent Budget and Science and Technology Strategy, the federal government is recognizing the need for commercialization which is seen as a step in closing the innovation gap in Canada.

Applied research is research directed at decreasing scientific uncertainties and developing solutions to industry identified problems, leading to the development or enhancement of products and processes. Applied research, conducted at polytechnic institutions, focuses on activities with industrial and commercial relevance, where partnerships lead to benefits for the institution, business and industry, and students.

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).

Polytechnics Canada recommends that the federal government expand public investment in applied research by investing \$150 million annually in a dedicated fund for:

- applied research projects conducted by polytechnics that are responsive to community needs, involve student participation and solve industry problems, particularly for SMEs;
- capacity development to allow polytechnics to allocate more staff time and institutional resources towards applied research conducted in partnership with industry;
- applied research centres or chairs to foster collaboration with industry and stimulate technology transfer in response to industry challenges, particularly SMEs.

With respect to the third recommendation, Applied Research Centres, the creation of these Centres would be a cutting-edge initiative that would not only attract talented researchers to Canada, but also allow us to make much better use of the thousands of underemployed internationally-trained professionals currently living in Canada.

Building on the unique strengths of individual polytechnics, **Polytechnic Applied Research Centres** would be original, innovative, and polytechnic. To effectively build Polytechnic research capacity, the Centres require funds that will allow them to build a market for their effective utilization over time. This will require a funding model that will allow the Centres to grow. With predictable, stable funding year after year, the Centres will have the capacity to generate revenue that can be reinvested directly into the growth of the Applied Research Centres.

With a recommendation of two Centres per polytechnic, the eligibility and criteria for such Centres would be defined carefully and take into consideration the elements that make applied research unique such as: team-based multi-disciplinary projects, researchers with track records in applied research, hands-on student involvement at the undergraduate level, and accelerated applied research project schedules from conceptualization to commercialization.

Creating specialized Applied Research Centres at polytechnic institutions would allow researchers to collaborate within the institution and across jurisdictions with other Centres. Introducing a model in which each Polytechnic identifies and retains “core” solutions that can be applied to similar problems from various industries would also advance Polytechnic applied research capacity.

Polytechnic Applied Research Centres would also offer Student Project-based Funding. The Centres would provide funding for student projects from \$5,000 - \$25,000 per initiative. Solutions-based projects involving senior students in degree and advanced diploma programs can be of tremendous benefit to industry by providing low-cost research-based solutions that provide immediate results.

Capacity building in the form of equipment enhancements and human resources infrastructure would still be required to support multidisciplinary research that involve more than one Centre.

Conclusion

Our global competitors are growing in number and are becoming more competitive. Unless we adapt and change, Canada and its enterprises risk falling behind others in the global economy, eroding our quality of life. Our sound economic fundamentals and recent performance place us in a strong position from which to respond to new global pressures, but we should not become complacent.

Polytechnics are best positioned to respond with the level of advanced skills that the global economy demands.

Considered overall, the polytechnics play a unique and indispensable role in guarding and extending Canada’s export competitiveness.

The polytechnics are already serving this need. With greater public and government support, they can lead the way in creating the best-educated, most-skilled and most-flexible workforce in the world.

All of which is respectfully submitted on behalf of Polytechnics Canada.¹

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¹ For more information on the role of Canada's polytechnic institutions, please see "Building Canada's Competitive Strength: The Role of Canada's Polytechnics" available at <http://www.polytechnicscanada.ca/publications/>