

# How Research Organizations Such as University of Calgary are Opening their Doors to Business



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Several recent studies have examined the innovation system in Canada and documented the need for business to enhance its investment and focus on R&D. It is well known that Canada is lagging in terms of Business Expenditure on R&D (BERD) with the latest OECD data (2011) showing that only 0.91% of GDP is invested, which ranks Canada well below the OECD median. Our lagging BERD intensity is linked to Canada's declining productivity which further emphasizes the need for the innovation ecosystem to be recalibrated.

Industry needs a stronger motivation and an environment for research and innovation, and universities need to play a significant role in providing the necessary talent and ideas. The challenge is in building an effective interface between these providers of talent and ideas with the business community so university-led discovery, creativity and innovation can be harnessed for economic growth and societal wellbeing.

There are many advantages to universities and industry working together, including the focusing of research on problems relevant to the economy and society at large. The grand challenges – be they in health-care, the environment, or elsewhere – need the best minds at the table and these are rarely found within one organization or sector.

University-industry collaborations furthermore ensure that student training will be more pertinent, and that a broad range of skills will be developed so graduates can hit the ground running. This will keep more graduates in Canada since they will be more adaptable and desirable to business – a critical issue given the expected labour shortages in some sectors. And with the anticipated

growth in the number of international students studying here, we want those who are educated in Canada to stay in Canada to contribute to our country's growth and prosperity.

So how can research organizations open their doors to business to build a constructive interface for collaboration? Here are some avenues that we are pursuing at the University of Calgary:

## Matching Strengths with Opportunities

Identifying priority research themes to match areas of strength ("push") with areas of unmet need in society for new knowledge, creative expression, and innovation ("pull") allows universities to better focus industry collaborations. Using research catalysts and "prospectors" to match strengths with opportunities and embedding commercialization and technology transfer experts throughout the university to promote opportunities are two initiatives that can accelerate industry partnerships.

## Building Industrial Consortium Models

Using an industrial consortium model – which brings multiple com-

panies to the table together– creates an environment to tackle problems that are major barriers to progress in a particular sector. This model spreads the risk and increases the value-add by getting input from many different companies around technology development. Grand challenges such as reducing the use of water in the oil sands work well using this model.

## Clearly Articulating Leveraging Opportunities

Using provincial, federal, and international programs to leverage industrial investments is an effective approach to scale up the size and scope of research programs at universities. Many CEOs do not realize that seed funding for major R&D projects can be leveraged two to three times if the expectations around timing and deliverables are well planned. The bang for the industrial buck in Canada is tremendous.

## Simplifying the Rules of Engagement

Creating simple rules of engagement with industry helps to streamline their investment in people and

research at the university. Standard templates for contracts as well as clear policies on overhead and intellectual property are a few examples. When not done right, these can be major hurdles for effective and efficient industry engagement. The majority of time spent with industry should be focused on exciting challenges and opportunities, not trying to paper the deal.

## Enhancing Commercialization and Knowledge Translation Savvy

Developing focused professional development and training programs for faculty and graduate students around commercialization and knowledge translation reaps dividends in terms of their confidence and know-how to interface with industry effectively. Graduate students in particular, will be better prepared and better able to transfer their experience to diverse career paths upon graduation and they will gain valuable leadership skills which will set them apart from their peers.

**Building the Commercialization Pipelines**  
Partnering universities with gov-

ernment agencies and industry to test new models for building the pipeline from discovery to application is showing promising results. By creating the structures and focusing in sector-specific areas, the speed of commercialization can be accelerated. Two examples with significant involvement of the University of Calgary are Biovantage to support the biomedical engineering sector and Tecterra in support of the geomatics industry. These models, in concert with the university's technology transfer arm Innovate Calgary, bring together researchers, industry players and sector-specific technology transfer leaders to create a dynamic and nimble 'idea to innovation' pipeline.

These are just a few of the many examples that increase the opportunities and maximize the potential for success of university-business collaborations. With the growing urgency to mine, develop and implement university-led discovery, creativity and innovation, it is expected that these collaborations will only grow in size and impact.