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Ontario looks at Asia

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The Canadian province is working towards attracting investments from Asia

Ontario, a Canadian province, has many discoveries to its credit such as Diphtheria Antitoxin (1914), Insulin (1921), Pabulum (1930), Pacemaker (1951), Progenitor Blood Stem Cells (1961) Development of L-DOPA (1960s), T-cell receptor (1984) to name a few. Sir Frederick Banting and J J R Macleod won the Nobel Prize for their work with Charles Best for the discovery of the role of insulin in 1923.



Medical devices

- 22,000 employees
- 600 companies
- Recorded revenues of \$3.8 bn (CDN \$5 bn) in 2004
- Home to more than 60 percent of Canada's medical and assistive technologies (MAT) companies
- Includes global companies such as GE Medical Systems, Siemens and Johnson & Johnson Medical Products

Biotech

- Canada's largest and North America's third-largest regional concentration of
- biotechnology firms
- Over 130 biotech companies and 60 research centers.
- 2,500 highly educated scientists, engineers and technicians
- Generates 53 percent of Canada's biotechnology revenue
- Revenues of \$1.6 bn (CDN \$2.2 bn) in 2003

Pharma

- 16,250 employees
- Recorded sales of approximately \$5.5 bn (CDN \$6.7 bn) in 2005
- Has key operations by

The above discoveries were the outcomes of the initiatives taken at university labs and research institutes in the region. These historic discoveries made in Ontario are today helping in the fight against cystic fibrosis, epilepsy, breast cancer, and Alzheimer's disease. This spirit has imbued researchers with a vision that extends far beyond today.

The research is not restricted to university labs. There are many spin-offs of the varsity departments. As Dr Tim McTiernan, Executive Director, Innovations, University of Toronto, with six Nobel Prizes to its credit, says, "With 3,000 employees the university has 103 spin-off companies. These enterprises are generating revenues up to \$725 million. It generates \$1.11 for every dollar of funding from the federal and provincial governments."

The government has taken a number of initiatives to support the life sciences industry. Creation of a separate ministry for research and innovation in 2005 is an evidence of its deep commitment. Heading the newly formed ministry, the Premier (head of the provincial government) Dalton McGuinty has decided to strategically combine the province's different economic development activities to support the innovation in the region and also strengthen the economy.

The positive approach to support innovation has led the provincial government to offer most attractive tax credits for research and development. Federal and provincial government incentives can reduce R&D costs of \$100 to less than \$41 after tax.

Ontario government has invested and continues to invest in the faculty so that its scientists and research centers can continue to achieve cutting-edge results against stiff international competition. Over the next four years, \$1.4 billion will be invested in R&D and commercialization efforts in Ontario.

Besides supporting R&D initiatives, the government also funds Commercialization Centers, which house start-up companies that have evolved from universities, clinics, research facilities and industry. Essentially, there are three important projects. One, the new Ontario Research Fund (ORF) that will consolidate several Ontario research programs, right through 2009-10, a total of \$634 million funds for ongoing and new research projects will be made available. Second, the new Cancer Research Program with the existing Ontario Cancer Research Network represents a \$253 million investment until 2009-10 for coordinated and sustainable cancer research. Third, a new Research Council of Ontario will help co-ordinate public research and raise Ontario's profile as an international research center.

The strong focus on commercialization opportunities in life sciences has been attracting many researchers to Ontario. Financial support enhances this orientation. Numerous government support initiatives reflect the strong commitment to commercialization. Provincially supported public-private partnerships have been developed, besides research parks, business centres and incubators.

Full marks to the interest among the Ontarian investors community in the life sciences. Steve Kee, director, media and marketing, Toronto Stock Exchange (TSX) says, "The TSX is the third largest life sciences market in the world and has been supporting the life sciences companies at all the stages of development starting from pre-clinical stage. The TSX has 84 life sciences companies listed on its stock exchange and 53 venture capital companies were listed with total market capitalization of \$20 billion."

Ontario also offers an interdisciplinary teamwork-a cornerstone of the province's far-sighted development strategy-can be seen at work in the Toronto-based MaRS project.

"MaRS is a convergence innovation center dedicated to accelerating the commercialization of new ideas and new technologies by fostering the coming together of capital, science and business. It is focused on helping Canadian innovators turn great ideas into great companies and supporting those companies as they become global market leaders," says Ross Wallace, director, corporate strategy, MaRS Discovery District.

He added, "MaRS connects the international partners in three distinct ways as gateway (helping Canadian businesses, researchers and entrepreneurs to connect with global opportunities), facilitator (helping all three levels of government link to global partners) and collaborator (creating institutional alliances to open new communication channels and share best practices)."

Sandra Pupatello, Minister, Economic Development and Trade adds, "The MaRS Discovery District is a North American hub where capital, science and business converge to turn the best Ontario ideas - medical treatments and cures, bio products and technologies - into reality."

Besides research

Fostering commercialization of research

- Government initiatives reflect commitment to commercialization. Provincially supported public/ private partnerships have been developed, besides research parks, business centres and incubators.
- The Ontario Innovation Corridor (OIC), which stretches from Canada's capital, Ottawa in the eastern part of the province, to Windsor in the southwest and into Northern Ontario, owes its genesis to provincial government support.
- Home to more than 60 research centers, several with global reputations such as the Ottawa Health Research Institute, the Hospital for Sick Children and the Samuel Lunenfeld Research Institute, and five bioscience incubators.
- Thunder Bay region in the province's northeast is among the most important life sciences clusters.
- OIC fostered by Regional Innovation Networks that promote the transfer of technology and help create partnerships with industry in each cluster area. Eleven regional life sciences clusters currently make up Ontario's innovation corridor.
- Ontario Centers of Excellence (OCE) Inc., foster cooperation on joint projects between universities and industry to move innovative products and technologies from the lab to the marketplace. A total of \$171 million is being invested over five years in OCE.
- Commercialization Centers house start-up companies that have evolved from universities, clinics, research facilities and industry.

Research activities in Ontario are focused mainly on cancer, cardiology, diabetes and neurosciences. The talented human capital matters a lot in research. Hence the provincial government has nurtured \$6.2 billion of historical investments in post-secondary education to ensure that the students will be able to lead the businesses to prosperity for years to come. "A lot of these investments are geared towards giving Ontario's students the opportunity to master their trade of choice through hands-on apprenticeship programs," says Harinder Takhar, Minister of Small Business and Entrepreneurship.

"More over Ontario, an economic engine of Canada, the nation's financial and manufacturing center, is a welcoming place where ideas, innovation and talented people thrive," says John Langley, Assistant Deputy Minister (Acting), Investment and Trade Division, Ministry of Economic Development and Trade.

Ontario government is the first provincial government to introduce legislation to help internationally trained professionals work in their field. This is an advantage the province has, which allows Ontario's small and medium-sized businesses to get the best workers from around the world and compete at a higher-level in the global economy. There are, in all about 340,000 small and medium-sized enterprises province-wide that make up 99 percent of the business in this province.

Regional strengths

- North Bay - Forestry Biotech & Biochemicals
- Ottawa - Bioproducts & Pharma
- Kingston - Biomedical
- Toronto - Biomedical, Bioinformatics & Pharma
- Hamilton - Biomedical & Clinical trials
- Mississauga - Biomedical & Pharma
- Sarnia - Biochemicals
- London - Biomedical & Agribiotech
- Guelph/ Waterloo - Agribiotech & Bioinformatics
- Sault Ste Marie - Forestry biotech
- Thunder Bay - Forestry biotech
- Sudbury - Biomining

Ontario also offers a 4.4 percent advantage over the US in pharma manufacturing, clinical trials 16 percent and biomedical R&D about 10.1 percent. The healthcare system reduces employer costs by up to 30 per cent compared to the US. The data generated from Ontario clinical trials is recognized by the US and EU authorities and the costs for phase II & III trials are lower than in the US. And also it has large multi- ethnic population. It has over 60 public and private institutions with over 10,000 researchers and well-established public and private CROs. Ontario offers whole a lot of opportunities for biotech companies for strategic alliances with R&D institutions and companies and listing in Toronto stock and venture exchanges.

These facts attracted many leading global pharma and biotech players to settle in Ontario, Canada's economic powerhouse. It is testimony to its secure position as one of the key life sciences locations in North America. Among these companies are GlaxoSmithKline, Amgen, AstraZeneca, Bayer, Baxter Corporation, Biogen, Boehringer Ingelheim, Eli Lilly, Novartis, Novopharm, Pfizer, Sanofi Pasteur, Biovail Corporation, GE Medical Systems, and Johnson & Johnson Medical Products. Even Indian companies like Nicholas Piramal, GangaGen and Ranbaxy have their presence in Ontario.

The secret behind the success of life sciences companies in Ontario is mainly due to interdisciplinary research, close contacts between universities and industry, and the ability to attract qualified workers and investors.

Narayan Kulkarni in Toronto

(The writer's visit to Canada was sponsored by Ontario government)