

2009

Invest in Canada MEDICAL DEVICES



RECENT INVESTMENTS IN CANADA

- » **AGFA Healthcare**, a Belgian company, will invest \$200 million to support growth of two R&D and regional operation centres in Ontario in 2009.
- » **Kodak Health Imaging**, headquartered in New York, expanded its operations in Prince Edward Island (PEI) in 2007. Now operating as Carestream Health Inc., the company has made its PEI location the centre for its radiology information system software development and for worldwide support.
- » **Widex Canada**, a Danish company, expanded its manufacturing facilities in Ontario with a new investment of over \$6 million in 2007.
- » **Molecular Biometrics**, a privately held metabolics company based in New Jersey, announced the opening of a new R&D facility in Quebec in 2007.

MAJOR GLOBAL INVESTORS IN CANADA

Abbott Point-of-Care
 Baxter Corporation
 GE Healthcare
 Johnson & Johnson
 Philips Medical Systems
 Siemens Medical Solutions
 Smith & Nephew
 St. Jude Medical Canada Inc.
 Sorin Group

LEADING CANADIAN COMPANIES

ART Advanced Research Technologies
 Angiotech
 Axela
 Baylis Medical
 BioMedica Diagnostics Inc.
 DNA Genotek
 Epocal
 GeneNews Ltd.
 MDS Nordion
 MIV Therapeutics
 Novadaq Technologies
 P yng Medical
 Resonant Medical
 Spectral Diagnostic
 Urodynamix Technologies Ltd.

The global medical device sector is highly diversified, consisting of companies ranging from small start-ups to large, mature firms producing and distributing a wide range of products for the diagnosis and treatment of ailments. Demographic trends such as aging populations, science and engineering developments leading to new and converging technologies and healthcare delivery trends are expected to contribute to industry growth over the foreseeable future.

The Canadian medical device manufacturing and development industry consists of approximately 1,000 firms, employing about 26,000 people. The industry, which is primarily composed of small and medium-sized enterprises, generated total revenues of approximately \$4 billion¹ and exports of \$2.4 billion in 2007.

The Canadian medical device industry benefits from linkages to associated Canadian industries including biotechnology, advanced materials, microelectronics, telecommunications, software and informatics. It is also well positioned to leverage world-class innovative research being conducted in Canadian universities, research institutes and hospitals.

Key Capabilities

The Canadian medical device industry has strengths in a range of specialties including cardiovascular devices, medical imaging, in vitro diagnostics, dental implants and materials, and assistive devices/home healthcare products.

Canada is home to several highly innovative **cardiovascular device** firms, including Vancouver's Neovasc, Greater Toronto's Novadaq Technologies, and Montréal-based CryoCath Technologies (acquired by Medtronic in 2008), which develops products that are used in more than 500 centres around the world.

Calgary's Imaging Dynamics is a global leader in digital radiography, with its imaging system being used in nearly 40 countries worldwide. Advanced Research Technologies' SoftScan® breast cancer diagnostic tool and Clemex Technologies' world-renowned image analysis tools contribute to Canada's position as a leading player in the field of **medical imaging**.

Canada also leads the way in **in vitro diagnostics** with MedMira Laboratories' flow-through rapid diagnostics. This Halifax-based firm has produced the only such test to achieve regulatory approvals in Canada, the United States, China and the European Union. Across the country, Vancouver region's Response Biomedical Corp. has formed strategic alliances with 3M Company and with Roche Diagnostics to commercialize its diagnostic tests in various parts of the world.

»» The Canadian medical device manufacturing and development industry consists of approximately 1,000 firms and 26,000 people; it generated nearly \$4 billion in revenues in 2007

¹ Unless otherwise noted, all values are in Canadian dollars

British Columbia

Vancouver is the hub of British Columbia's life-sciences sector, which employs about 2,700 people and earns revenues of approximately \$800 million. More than 60 medical device manufacturing and distributing companies operate in the province. Specialties include interventional and implantable cardiology, diagnostic and therapeutic ultrasound, diagnostic testing and analyzing, as well as orthopedic and device design and development. Investments of \$1.5 billion in science infrastructure over the last few years, including significant investments in R&D, contribute to British Columbia's success in life sciences. Simon Fraser University's 4D labs support the cluster through its research on advanced materials and nanoscale devices.

Manitoba

Winnipeg is home to a cluster of expertise in the development and commercialization of magnetic resonance imaging (MRI) equipment and technologies as well as in the production of medical assistive devices for institutional and retail markets.

Cutting-edge research in MRI and other non-invasive surgical technologies is conducted in Winnipeg at the National Research Council Institute for Biodiagnostics, Canada's most advanced facility for studying and developing nuclear magnetic resonance and MRI technologies, and at St. Boniface General Hospital Research Centre.

The University of Manitoba, Winnipeg's Health Sciences Centre and the Centre for the Commercialization of Biomedical Technology are among some of the organizations involved in the development and commercialization of medical technology. Key firms include IMRIS Inc., a global leader in the supply of fully integrated, intraoperative imaging systems and Intelligent Hospital Systems Inc., which designs and develops automated solutions for hospitals.

Alberta

Alberta's medical device sector is home to more than 60 firms, many of which are located in the **Edmonton** and **Calgary** regions. The province hosts world-renowned researchers and state-of-the-art facilities that provide a wealth of biomedical research capacity. The universities of Alberta, Calgary, and Lethbridge offer an unparalleled environment for primary research, including the National Institute for Nanotechnology and the National Research Council Institute for Biodiagnostics West.

Alberta's medical devices industry has recognized strengths in wound care, personal protective equipment, medical diagnostics, and medical imaging technologies.



Ontario

Ontario's medical and assistive device industry includes clusters in **Ottawa** as well as **Toronto**, which are home to many subsidiaries of multinational companies such as Abbott Point-of-Care and Best Medical. Ontario's major strengths include medical imaging, robotics and e-health.

With 24 colleges and 20 universities, Ontario produces 29,000 graduates a year in mathematics, engineering and sciences, ensuring a steady supply of new talent. The province is also home to numerous internationally recognized research institutes and to Toronto's MaRs Centre—a gateway to Canada's largest concentration of scientific research, anchored by major teaching hospitals, the University of Toronto and more than two dozen affiliated research institutes. Ontario also boasts the Neurochip Consortium, a global partnership that combines university research groups with biological and technological know-how from market-leading companies, to ensure reliable and valid results in testing drug effects on neuronal network-driven activity.

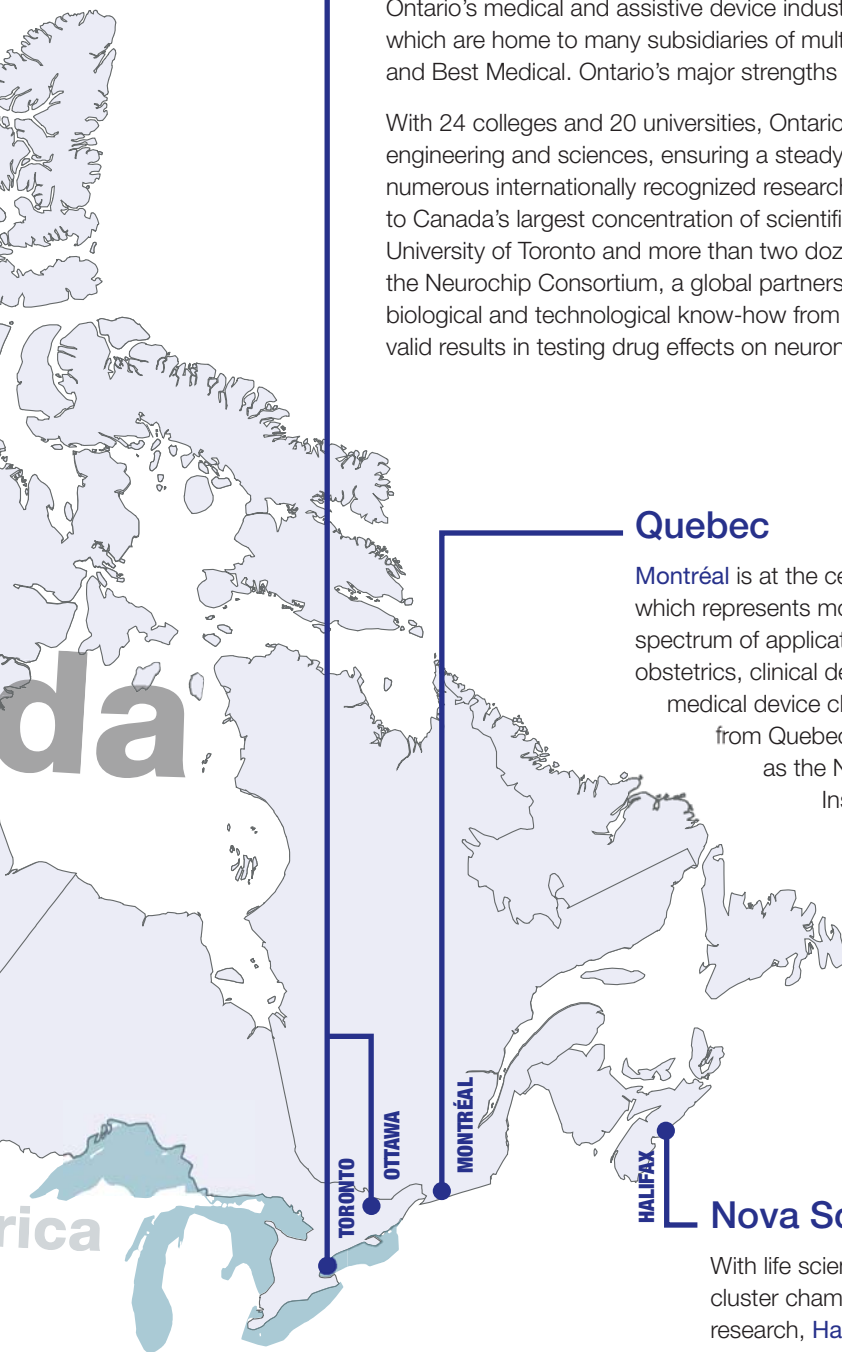
Quebec

Montréal is at the centre of Quebec's booming medical technologies industry, which represents more than 350 companies. The industry covers a broad spectrum of applications, including radiology, cardiology, orthopedics, oncology, obstetrics, clinical decision assistance, dentistry and remote surgery. Montréal's medical device cluster benefits from the expertise and innovation stemming from Quebec's optic-photonics sector and from research centres such as the National Research Council of Canada Industrial Materials Institute.

Montréal is home to many innovative companies such as Art, Noveko International, Orthosoft and Resonant Medical. The region also has plans for two new hospital centres that will further strengthen its life sciences cluster—the Centre hospitalier de l'Université de Montréal and the McGill University Health Centre.

Nova Scotia

With life sciences companies hard at work on R&D, and technology cluster champions pouring more than \$100 million annually into research, **Halifax** is rapidly building its capacity to produce pioneering, lucrative life sciences products. Home to a significant research community comprised of universities, community colleges, hospitals and government labs engaged in life sciences work, Halifax is the location of choice for firms such as Eastmed, which develops medical innovations catering specifically to women's health.





INVESTMENT LOCATION BENCHMARKING

METHODOLOGY

This benchmarking study assesses the competitiveness of a number of Canadian clusters against competing international business locations. Based on an investor's perspective, the research and analysis uses a representative investment project prototype (an operation that develops and manufactures medical devices and products—see profile on page 5) to assess criteria that corporate decision makers typically examine when evaluating location alternatives for foreign investment.

This international location benchmarking exercise was conducted by IBM-Plant Location International (IBM-PLI), a renowned global location consultancy. IBM-PLI performed objective research to assess the comparative cost and quality of doing business in various locations, simulating the approach used by investors when screening candidates for corporate investment projects. The benchmarking study examined 250 to 300 financial and qualitative location indicators in the assessment of each industry subsector.

To assess the quality of a location's operating business environment, data were collected from a variety of sources for the different subfactors in each of the categories featured in the operating environment table (page 5). Data for the qualitative assessment were translated into comparable scorings (zero to 10) for each subfactor using a weighted scoreboard approach. Weights were assigned to each location category and subfactor to demonstrate their relative importance in the location selection process. These weights are specific to each industry subsector and are based on IBM-PLI's experience in helping investors make strategic decisions when choosing locations.

A high-level financial analysis was also completed to take into account major location sensitive investment and operating costs and revenues for each representative project profile. Cash flow projections have been calculated and discounted over a 10-year period, incorporating anticipated inflation rates, to determine their net present value and to assess the profitability of the project in each of the benchmarked locations.



benchmarking the comparative
cost and quality of doing
business in global locations

MEDICAL



INVESTMENT LOCATION BENCHMARKING

REPRESENTATIVE PROJECT PROFILE



GENERAL DESCRIPTION OF OPERATIONS

Develop and manufacture medical devices.

KEY PROJECT DRIVERS

- » Capacity of attracting and retaining good-quality labour (assembly is work intensive)
- » Low-cost manufacturing base (as it is a mature market with cost-sensitive products)
- » Local access to strong pool of relevant manufacturing as well as engineering profiles

OPERATING COST ANALYSIS

PROJECT REQUIREMENTS FOR FINANCIAL MODELLING

LABOUR

(HEADCOUNT = 100)

Production Operatives: 80
Engineers: 8
Maintenance and Repair: 6
Management and Administration: 6

SALES

CAD \$20,000,000

MACHINERY AND EQUIPMENT

CAD \$20,000,000

PROPERTY

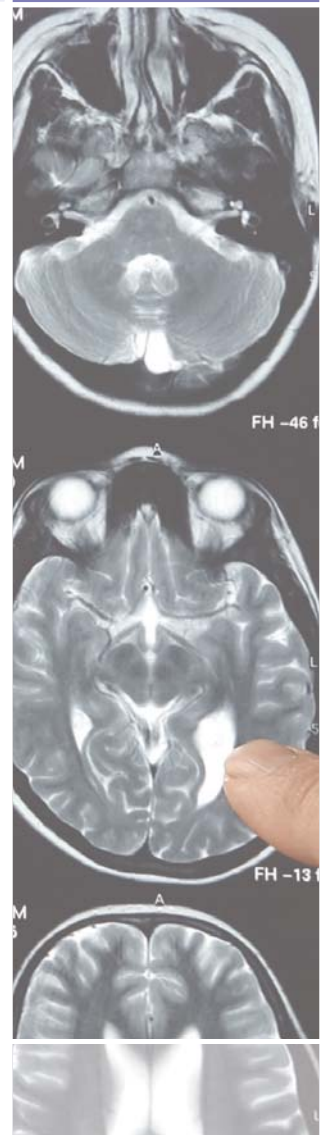
Land: 3 acres
Building: 50,000 sq ft

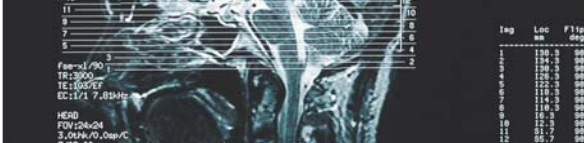
UTILITIES

Power: (Monthly Consumption) 200,000 kwh
Gas: (Monthly Consumption) 4,000 MCF
Water: (Daily Consumption) 15,000 gal

OPERATING ENVIRONMENT

GENERAL BUSINESS ENVIRONMENT » 10%*	» Business permitting procedures; » Availability of financial support & incentives; » Compliance with protection of privacy regulations, information security, IP rights; » Quality of support from local government & development agencies; » Economic and financial stability; » Political stability
LOCAL POTENTIAL TO RECRUIT SKILLED STAFF » 40%*	» Presence of experienced medical device employees, including manufacturing related; » Overall size of labour market; » Overall tightness in the labour market (unemployment); » Presence of student population
PRESENCE OF INDUSTRY/CLUSTER » 15%*	» Market proximity; » Presence of industry base; » Importance of R&D
FLEXIBILITY OF LABOUR & REGULATIONS » 5%*	» Industrial relations/attitude of unions; » Working time regulations; » Hiring & firing flexibility
INFRASTRUCTURE & COMMUNICATIONS » 20%*	» Highway network & congestion; » Air access; » Public transport; » Reliability of power supply; » Quality & reliability of IT & telecommunications
REAL ESTATE » 5%*	» Availability of large industrial sites
LIVING ENVIRONMENT » 5%*	» Attractiveness for young international recruits; » Attractiveness for expatriates; » Cost of living



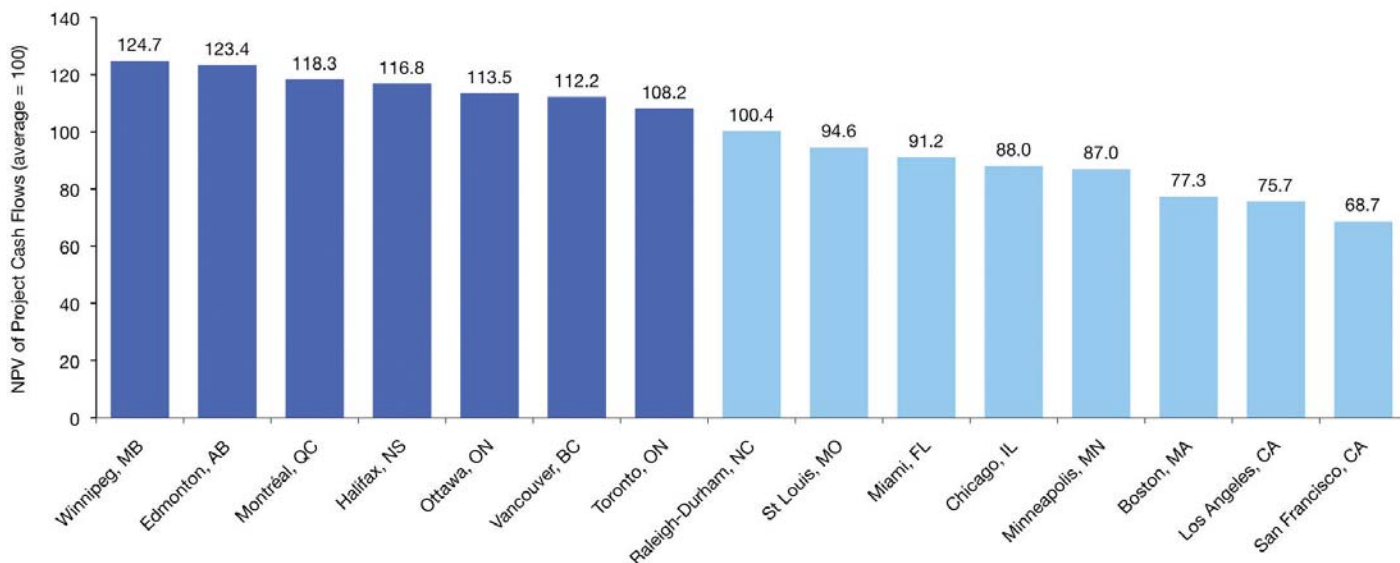


Canada offers global medical device manufacturers tremendous opportunities in rapidly expanding domestic and international markets. With a combination of attractive cost competitiveness, a strong and stable economy, a dynamic business environment, skilled labour force, access to the North American market and a high quality of life, Canadian locations present some of the strongest investment propositions among advanced economies.

COST ASSESSMENT*

- Canadian
- Non-Canadian

CS\$1 = US\$0.862



A better return on your investment

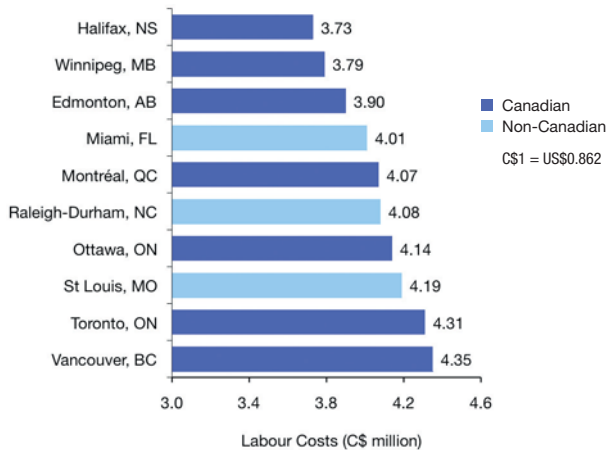
Canada is a dynamic economy that offers advantageous industrial capabilities for business. Low corporate tax rates, R&D incentives and competitive labour costs make Canada a financially attractive North American option when it comes to foreign investment. Already

home to many world-leading medical device firms, Canadian cities offer high potential for profitability and are the most economically appealing options in the medical device manufacturing sector when compared to other North American locations.

*Unless otherwise noted, graphs represent IBM-PLI assessment scores.



Estimated annual labour costs (highest-ranking cities)**



Advantageous labour costs

Cost of labour is an important consideration for medical devices development and manufacturing operations requiring engineers, production operators and maintenance staff. A calculation of the estimated annual labour costs for a typical medical device manufacturing firm demonstrates the significant cost-saving potential of Canadian locations over prominent U.S. competitors. Halifax, Winnipeg and Edmonton all operate with labour costs below that of any U.S. city benchmarked.

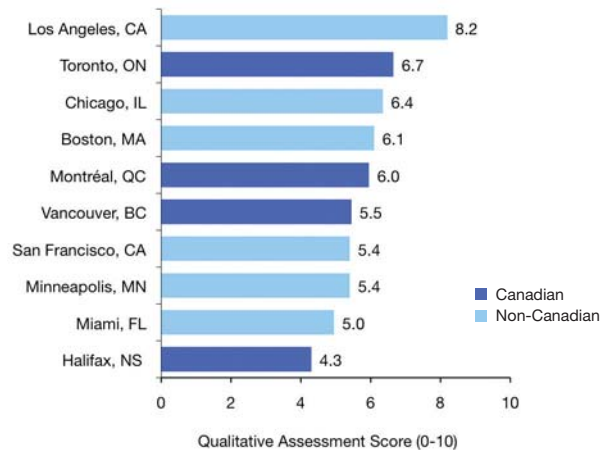
An important component of Canada's labour cost advantage relative to the United States stems from its lower costs of providing employee benefits. Canada's national healthcare system implies that most medical insurance costs are publicly funded rather than by the employer, resulting in significant savings.

Thriving medical device clusters

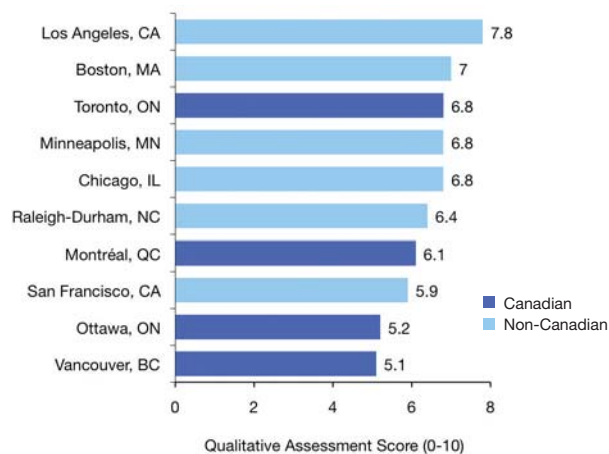
Clusters of medical device companies, medical equipment manufacturing, medical instrument manufacturing, and medical technology companies, allow close linkages with training institutions, buyers and suppliers. This offers advantages that lead not only to greater efficiency but also to accelerated rates of improvement and innovation.

Canada's medical devices sector benefits from large established clusters in various cities as well as from strengths in related technologies and disciplines. For example, Canada's expertise in information and communication technologies and the convergence of technology are contributing to the growth and success of Canada's medical device sector. Clusters in areas such as Toronto, Montréal and Vancouver, provide access to a strong network for new operations.

Presence of industry base (highest-ranking cities)*



Experienced staff, medical device manufacturing (highest-ranking cities)*



A talented and motivated workforce

Canada believes in investing in its people and welcoming talent from around the world. Because of this, Canadian clusters are able to offer medical device firms a large, productive and highly skilled workforce.

Canadian cities such as Toronto, Montréal, Ottawa and Vancouver benefit from the advantage of being home to many medical device manufacturing operations employing thousands of people, as well as to thousands of employees involved in the manufacturing of medical instruments.

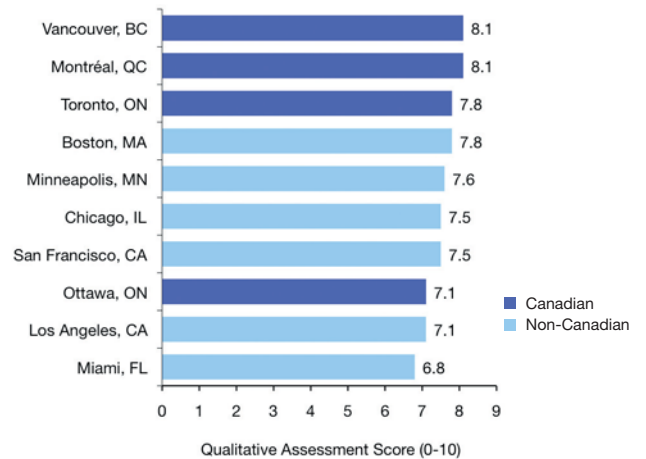
Outstanding quality of life

In the competition to attract international talent, Canada prides itself on its highly rated living environment.

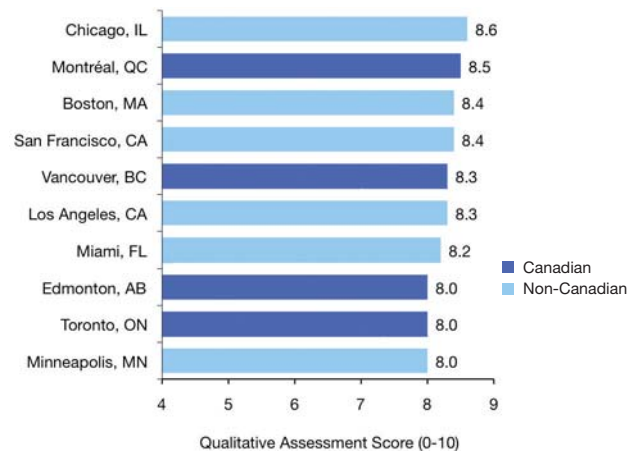
With its natural beauty, comparatively lower cost of living, and high quality of life, Canada is globally regarded as being one of the best places in the world in which to live and do business. That is why Canadian cities attract young international recruits and talented expatriates from around the globe.

International measures such as the Mercer Cost of Living Survey, Sperling's Cities Ranked & Rated and Economic Intelligence Unit's quality of life index place Canadian cities near the top of the rankings.

Living environment (highest-ranking cities)*



Infrastructure (highest-ranking cities)*



World-class infrastructure

Canada's integrated transportation network enables businesses to source inputs and move goods to market with affordability and ease. Canada's uncongested roadways include a coast-to-coast highway network that is fully interconnected with the U.S. Interstate highway system. World-class truck carriers service this network, moving cargo efficiently across North America.

Canadian cities themselves feature well-developed urban transportation networks, including highways, roads and public transit. Main urban centres such as Montréal, Vancouver and Toronto also offer best-in-class accessibility by air and water. Major international airports in these cities provide excellent direct international connections to the United States and overseas destinations. The new EU-Canada aviation agreement will continue to support Canada's growing transatlantic trade, facilitating the efficient flow of people and valuable goods.

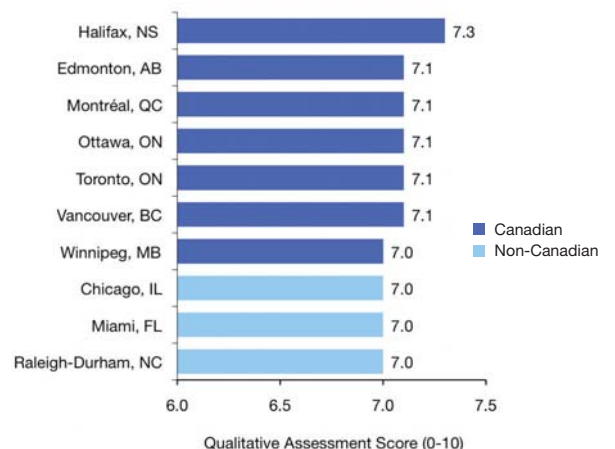
A conducive business environment

Economic stability, support from government and local economic development agencies, R&D incentives, business permitting procedures, financial support available to business, privacy regulations, information security and intellectual property rights are important considerations for businesses when investing or expanding their operations.

Canada has created an advantageous business environment for companies to invest and flourish. With only two procedures required to get operations going, compared to six for the U.S., Canada makes it easy for new investors to be in business.

As the No. 1 country among the G7 for GDP growth over the last decade and with a strong banking system, Canada provides a safe and strong business environment that offers growth potential and peace of mind for your investment.

General business environment (highest-ranking cities)*



*Unless otherwise noted, graphs represent IBM-PLI assessment scores.

Invest in Canada

at your service

We offer the following valuable services to our clients:

- strategic market intelligence on your specific sector
- direct contact with key decision-makers in the government
- referrals to contacts in firms and industry associations, as well as experts
- information and advice on setting up a business in Canada
- help in identifying a suitable place in which to invest
- assistance in developing a business case for your next investment decision

Our global network will show you why Canada is your strategic choice for growth.

To reach an investment officer in your market, please visit:

www.investincanada.com/globalnetwork

Invest in Canada Bureau
Foreign Affairs and International Trade Canada
111 Sussex Drive
Ottawa, ON, Canada K1N 1J1

Email: investincanada@international.gc.ca
Website: www.investincanada.com

Catalogue Number FR5-38/10-2009E-PDF
ISBN Number 978-1-100-12052-2