

2011



Invest in Canada

MEDICAL DEVICES

Canada's competitive advantages



Canada 

MAJOR GLOBAL INVESTORS IN CANADA

- Abbott Point of Care
- Agfa Healthcare
- Baxter International
- Elekta AB
- GE Healthcare
- Johnson & Johnson
- Medtronic Inc.
- Philips Medical Systems
- Siemens Medical Solutions
- Smith & Nephew
- St. Jude Medical Canada Inc.
- Sorin Group
- Zimmer

LEADING CANADIAN COMPANIES

- Axela
- Baylis Medical
- BioMedica Diagnostics Inc.
- DNA Genotek
- GeneNews Ltd.
- IMRIS
- Nordion
- Novadaq Technologies
- Pyng Medical Corp.
- Spectral Diagnostics
- SQI Diagnostics
- Ultrasonix Medical Corp.

RECENT INVESTMENTS IN CANADA

AGFA HEALTHCARE

Belgium-based Agfa Healthcare has opened a new facility at the University of Waterloo (Ontario) in 2011. The new facility supports research and development, as well as the commercialization of healthcare technology, and will drive job creation in the region.

ELEKTA

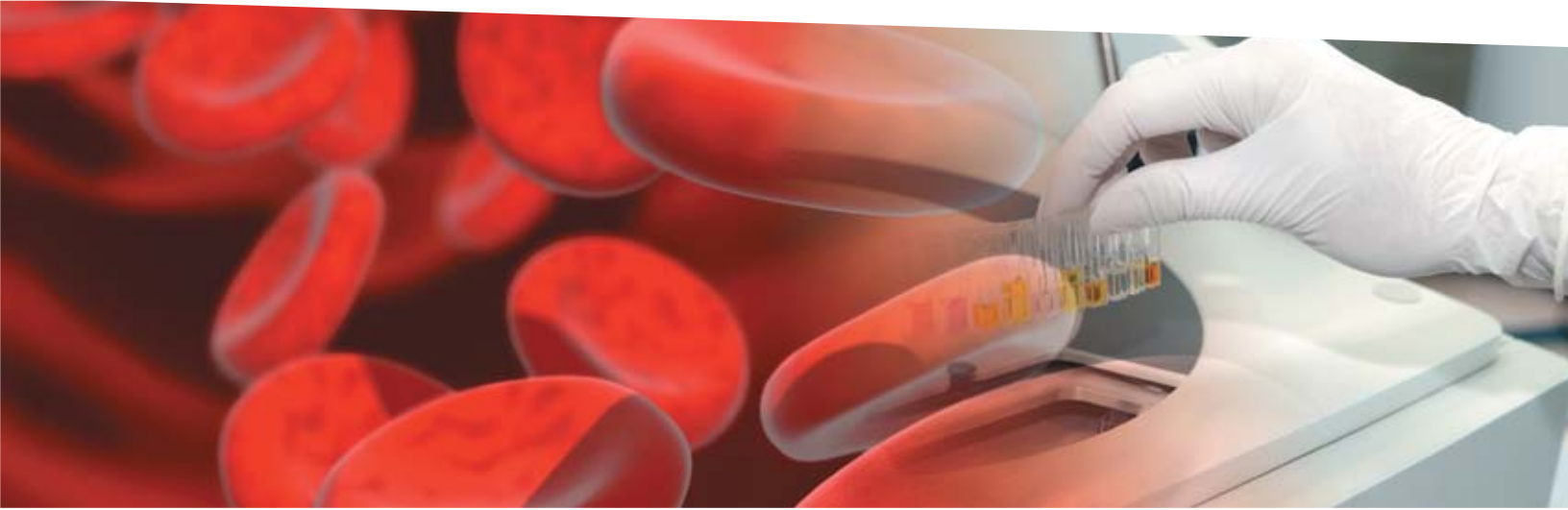
The Swedish company Elekta Neuromag established the Laboratory for Clinical Magnetoencephalography (MEG) in Halifax in 2010. MEG is a non-invasive technique used to detect and record magnetic fields associated with electrical activity in the brain. The lab is the first of its kind in Canada and one of only a handful of such facilities around the world. It was developed with Canadian partners and is valued today at \$3.1 million.*

MEDTRONIC INC.

In 2008, Medtronic Inc., a global leader in medical technology, acquired the Montréal-based company CryoCath Technologies Inc. in a deal worth some \$400 million. CryoCath continues to operate as a major centre for research, development and manufacturing for its new parent company.

* Unless otherwise noted, all values in this publication are in Canadian dollars.





CANADA'S MEDICAL DEVICE SECTOR: WORLD-CLASS AND INNOVATIVE

Canada's highly diversified medical device manufacturing and development industry encompasses more than 1,000 firms employing some 26,000 people. The industry consists primarily of small- and medium-sized enterprises that generated a combined total of around \$2.6 billion in export revenues in 2009. Demographic trends, developments in science and engineering, and health-care delivery changes are expected to contribute to the industry's growth in the years ahead.

The industry's many innovative firms specialize in cardiovascular devices, medical imaging, in vitro diagnostics, dental implants and materials, and assistive devices for home health care. Notable products developed in Canada include:

- the Neovasc Reducer™ for refractory angina and PeriPatch™ surgical tissue (developed and manufactured by Neovasc in Vancouver);
- catheter-based products for the cryotherapeutic treatment of cardiovascular disease, now used in more than 500 medical centres around the world (developed by Montréal-based CryoCath Technologies);
- the world's only movable, high-resolution, intra-operative MRI system (developed by Winnipeg-based IMRIS, a world-renowned image-guided therapy systems company);
- a digital radiography imaging system used in nearly 40 countries worldwide (developed by Imaging Dynamics in Calgary);
- the SPY imaging system, which provides clinically relevant, anatomic and physiologic images during open and minimally invasive surgical procedures (developed by Novadaq Technologies in Toronto).

Canada is also a world leader in the field of in vitro diagnostics. For example, Halifax-based MedMira developed a flow-through rapid diagnostic HIV test, the only such product to earn regulatory approval in Canada, the United States, China, and the European Union. And Vancouver-based Response Biomedical Corp. has formed strategic alliances with 3M and Roche Diagnostics to commercialize its diagnostic tests in several countries around the world.

Canada's medical-device sector benefits from associated Canadian industries in 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.

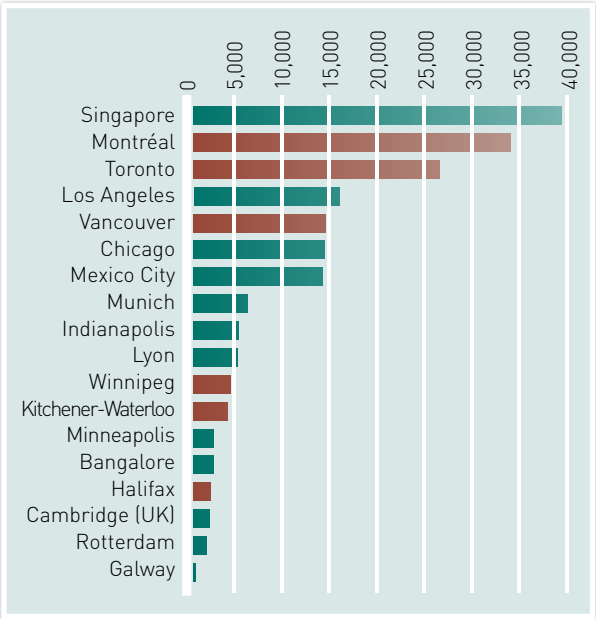
CANADA'S COMPETITIVE ADVANTAGES

Advantage: A large pool of experienced, highly trained R & D researchers

With its high number of experienced, highly trained R & D researchers, Canada offers many advantages to companies looking to launch or expand their R & D facilities. With close to 35,000 researchers in Montréal alone, and another 40,000 in Toronto and Vancouver combined, Canada's three largest cities are ideal investment locations. Winnipeg, Kitchener and Halifax are also centres of scientific research expertise.

- This chart looks at the estimated total number (for 2011) of researchers involved in research and development activities.

Researchers in research and development (estimates)



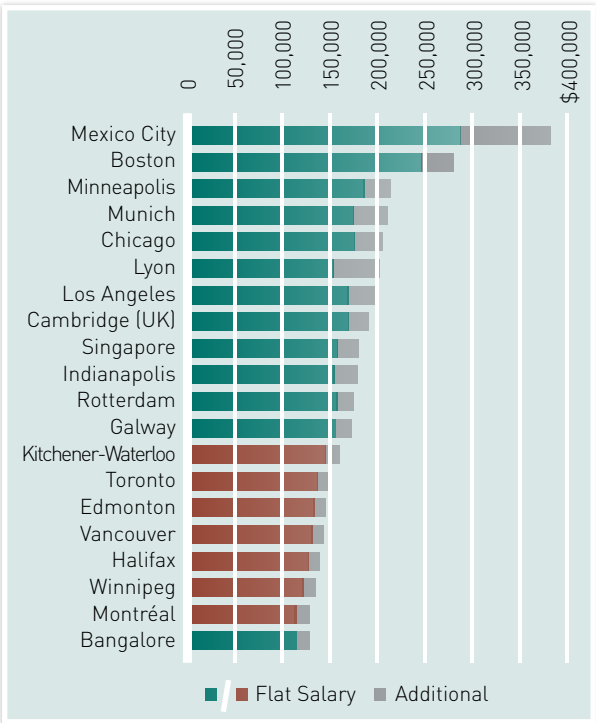
Sources: fDi Benchmark; fDi intelligence from the Financial Times Ltd

Advantage: Competitive remuneration costs

The salary costs of R&D executives in Canadian cities are competitive compared to, for example, cities in the United States and in Europe.

- This chart examines remuneration levels for heads of research and development working in multinational companies. R & D heads, who exercise overall control of their company's R & D function, may direct research units in a limited number of countries or in a large research and development centre for a single product line; the products they oversee are highly technical and require years of development. In the chart, remuneration includes flat salary as well as additional compensation, such as incentive payments and performance bonuses.

Head of research and development



Sources: fDi Benchmark and World Economic Forum, *Global Competitiveness Report (2010/11)*

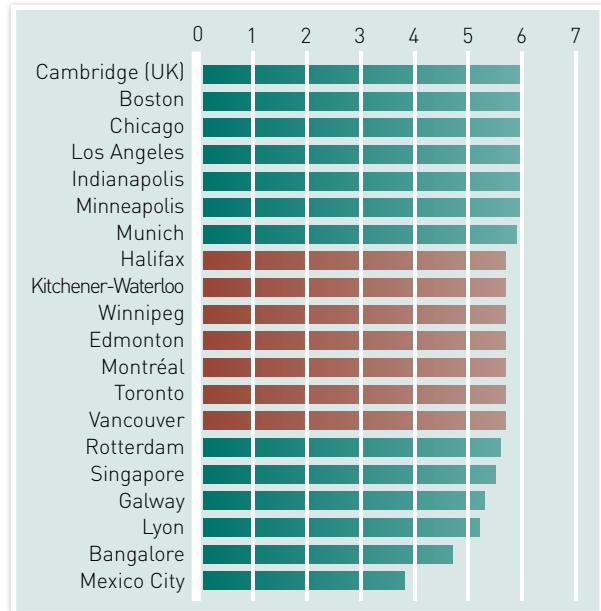
Advantage:

World-class scientific research centres

Canada is home to several internationally recognized universities and leading-edge scientific research institutions, staffed with world-class scientists and researchers. In addition, the federal government provides strong support to research and development across the country through such internationally recognized institutions as the International Development Research Centre (www.idrc.ca), the National Research Council Canada (www.nrc-cnrc.gc.ca), and the Canadian Institutes of Health Research (www.cihr-irsc.gc.ca).

- This chart rates the quality of scientific research institutions on a scale of 0 to 7, where 0 signifies that institutions are of “very poor” quality and 7 signifies that institutions are “the best in their field internationally.”

Quality of scientific research institutions



Sources: fDi Benchmark; World Economic Forum, *Global Competitiveness Report (2010/11)*

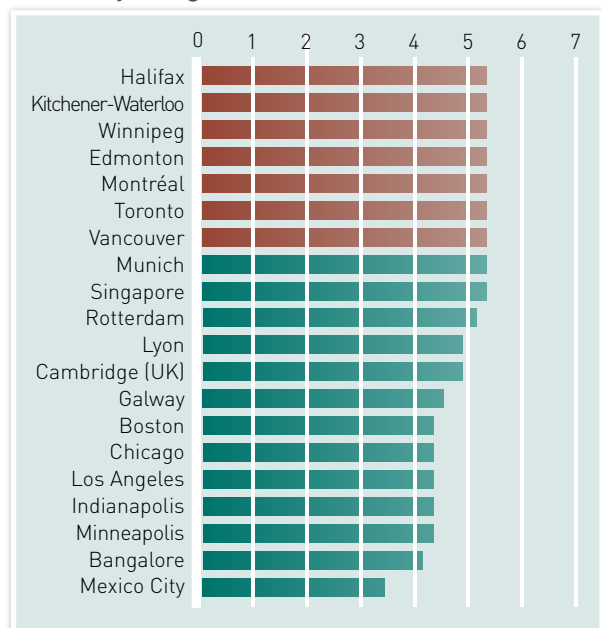
Advantage:

A no-nonsense legal framework

Canada's legal framework has a reputation for settling legal disputes reasonably and to the satisfaction of involved parties. The federal government deals with legal issues of national scope, including those related to international trade and intellectual property, while provincial governments handle legal matters related to health and education, among other issues. Canada's legal system is rooted in British common law, while the province of Québec operates under a system of civil law for private legal matters.

- This chart assesses the efficiency of legal frameworks in settling private business disputes, with 0 signifying that a framework is “extremely inefficient” and 7 “highly efficient.”

Efficiency of legal framework



Sources: fDi Benchmark; World Economic Forum, *Global Competitiveness Report (2010/11)*

THE MEDICAL DEVICES INDUSTRY IN CANADA: AN OVERVIEW

BRITISH COLUMBIA ○

Vancouver is the hub of British Columbia's life-sciences sector, which employs about 2,700 people and generates annual revenues of approximately \$800 million. More than 60 medical-device manufacturing and distribution companies operate in the province. Specialties include interventional and implantable cardiology, diagnostic and therapeutic ultrasound, and diagnostic testing, as well as the design and development of orthopaedic devices.

Over the last few years, an investment of \$1.5 billion in the province's science infrastructure, combined with significant investments in R & D, have contributed to the success of British Columbia's life-sciences industry. Simon Fraser University's 4D Labs research centre also supports the sector through its research on advanced materials and nanoscale devices.

ALBERTA ○

Alberta's medical device industry has recognized strengths in wound care, personal protective equipment, medical diagnostics, and medical imaging technologies. The sector numbers more than 80 firms, most of which are located in and around the cities of **Edmonton** and **Calgary**.

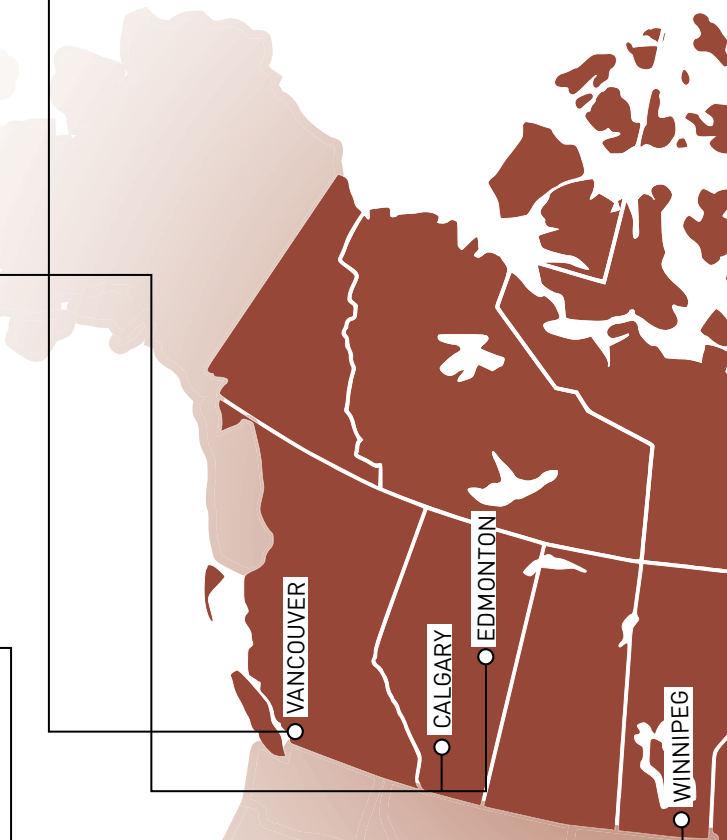
The province is home to world-renowned researchers and state-of-the-art facilities, including the National Institute for Nanotechnology, located in Edmonton, and the National Research Council Institute for Biodiagnostics (West), in Calgary, all of which provide a wealth of biomedical research capacity. In addition, the universities of Alberta, Calgary, and Lethbridge offer an unparalleled environment for primary research.

MANITOBA ○

Winnipeg is home to a cluster of companies with expertise in the development and commercialization of magnetic resonance imaging (MRI) equipment and technologies and 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. Research also takes place at St. Boniface General Hospital Research Centre.

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





○ ONTARIO

Ontario's medical- and assistive-device industry is based primarily in **Ottawa** and **Toronto**, and comprises many subsidiaries of multinational companies, such as Abbott Point of Care, Agfa and GE Healthcare. The industry's main areas of expertise are medical imaging, robotics, and e-health.

With its 24 colleges and 20 universities, Ontario graduates 29,000 students each year in mathematics, engineering and sciences, thereby ensuring a steady supply of new talent in medical-device professions. The province is also home to numerous internationally recognized research institutes, among them Toronto's MaRs Centre, a gateway to the largest concentration of scientific research companies in Canada, major teaching hospitals, the University of Toronto and more than two dozen affiliated research institutes. Ontario also boasts the Neurochip Consortium, a global partnership of university research groups and market-leading companies, which aims to ensure that the testing of drug effects on neuronal activity produces reliable and valid results.

○ QUÉBEC

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

Montréal is also the city of choice for innovative companies such as Noveko International, Zimmer, and Resonant Medical (acquired by Elekta in May 2010), as well as global leaders such as Medtronic. The city also has plans for two new hospital centres—the Centre hospitalier de l'Université de Montréal and the McGill University Health Centre—that will further strengthen its life-sciences research and health-care industries.

○ NOVA SCOTIA

With life-sciences companies engaged in R & D and technology cluster champions investing more than \$100 million annually in research, **Halifax** is rapidly building its capacity to produce pioneering, lucrative life-sciences products. Home to a significant research community composed of universities, community colleges, hospitals, and government labs engaged in life-sciences work, Halifax is also the preferred location for medical manufacturing firms such as EastMed, which develops medical innovations catering specifically to women's health. Another source of pride for Halifax is the Brain Repair Centre, a multidisciplinary facility that links more than 100 world-class researchers and physicians specializing in ground-breaking treatments and technologies for studying the brain.

CANADA'S COMPETITIVE ADVANTAGES

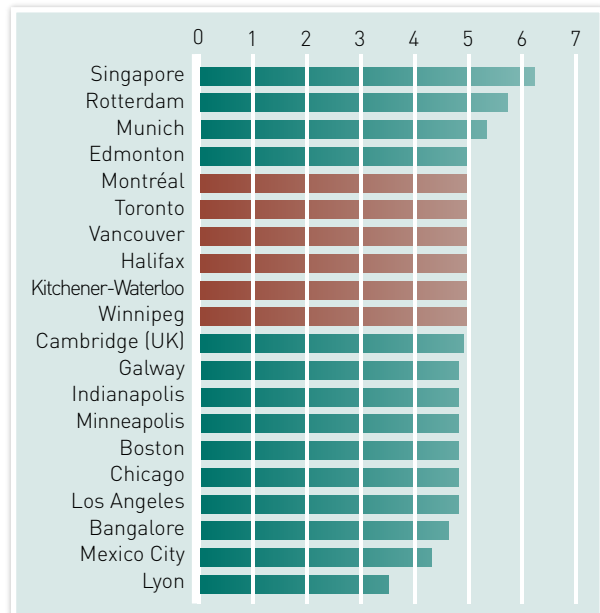
Advantage:

Good labour relations

Labour relations in Canada favour cooperation over confrontation, a principle enshrined in the *Canada Labour Code*. The Code, which “deems the development of good industrial relations to be in the best interests of Canada in ensuring a just share of the fruits of progress to all,” guides federal, provincial and territorial labour relations programs. Overall, labour relations in Canada are somewhat better than, if not comparable to, those in the United Kingdom and the United States.

- This chart assesses the degree of cooperation in labour-employer relations, with 0 signifying that relations are “generally confrontational” while 7 signifying that they are “generally cooperative.”

Labour relations



Sources: fDi Benchmark; World Economic Forum, *Global Competitiveness Report* (2010/11)

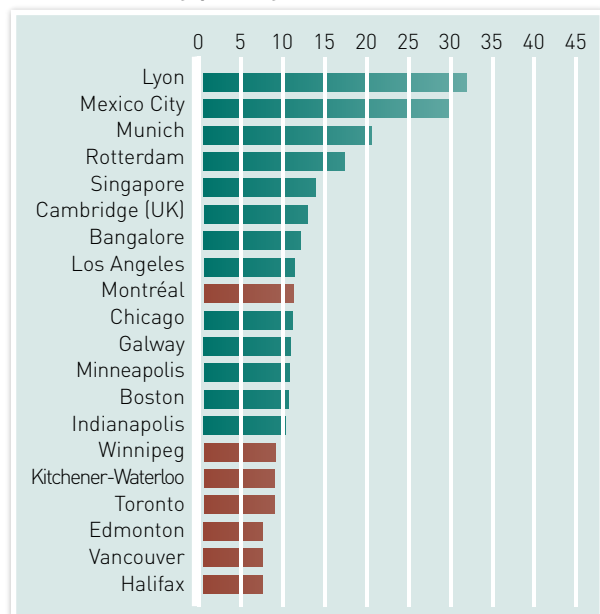
Advantage:

Low social security contributions

Canadian workers have very good social security coverage, but this does not translate into excessive costs to employers. In Canada, social security contributions paid by employers are generally lower than in the United States and in European countries.

- This chart looks at employers' contributions to employee social benefits, expressed as a percentage of employee salaries.

Social security paid by businesses



Sources: fDi Benchmark; Deloitte International, *Tax & Business Guide* (Oct. 2009); Watson Wyatt, *Global 50 Remuneration Planning Report 2009/10*; PriceWaterhouseCoopers *Global Tax Summaries* (Oct. 2009); fDi intelligence based on Towers Watson and ToolKit (Aug. 2010); fDi intelligence based on ISSA (Aug. 2010)

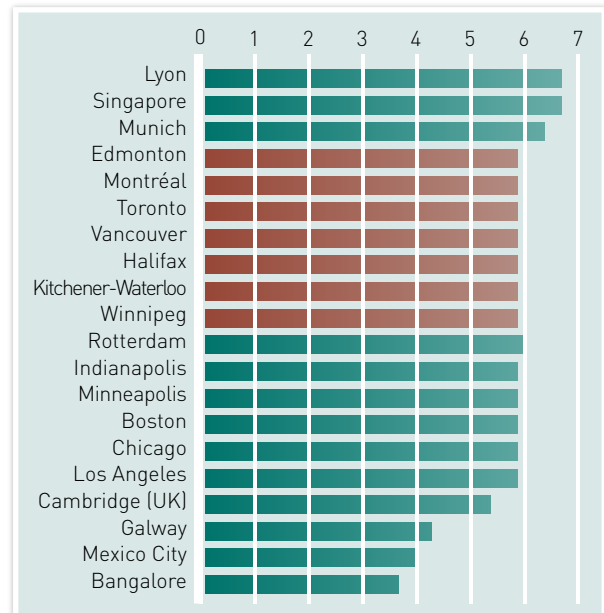
Advantage:

World-class infrastructure

Canada's modern, world-class public infrastructure supports the economic growth of its cities and communities. Canadian roads, bridges, railroads, ports and airports are well located, well built, well maintained and secure.

- This chart rates the overall quality of infrastructure such as transport, telephony and energy. A rating of 0 signifies that infrastructure is "extremely underdeveloped," while a rating of 7 signifies that infrastructure is "well developed."

Overall infrastructure quality



Sources: fDi Benchmark; World Economic Forum, *Global Competitiveness Report (2010/11)*



CANADA'S COMPETITIVE ADVANTAGES

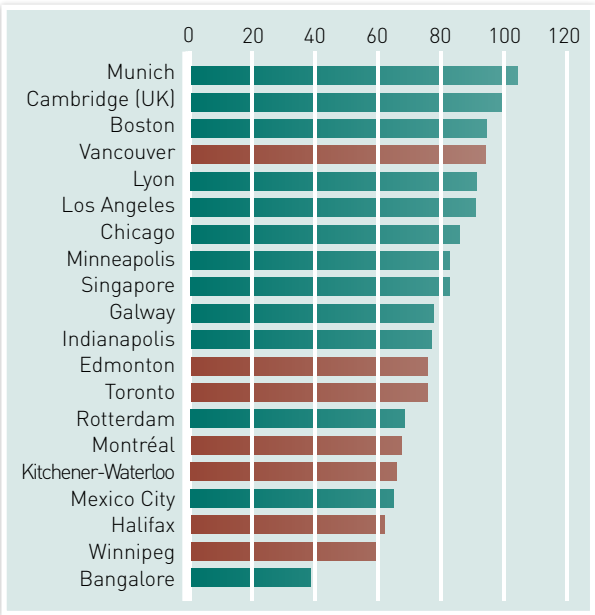
Great quality of life at affordable cost

Canadian cities offer a high quality of life at an affordable cost. Compared to Los Angeles, for example, Edmonton, Winnipeg, Toronto, Kitchener, Montréal and Halifax boast a lower cost of living combined with a higher quality of life. In 2011, the Economist Intelligence Unit ranked Vancouver as the most liveable city in the world, while Toronto and Calgary also placed in the top 10.

► This chart assesses a variety of living costs, including housing.

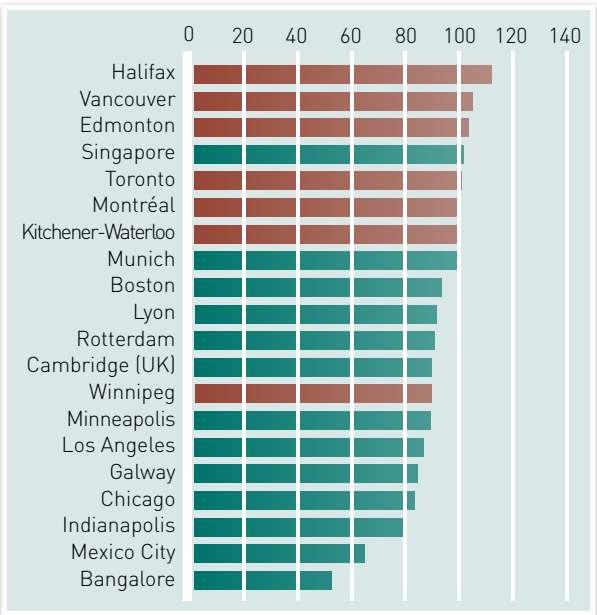
► This chart assesses quality of living factors.

Cost of living index



Sources: fDi Benchmark; fDi intelligence from the Financial Times Ltd.

Quality of living index



Sources: fDi Benchmark; fDi intelligence from the Financial Times Ltd.



INVESTMENT LOCATION BENCHMARKING

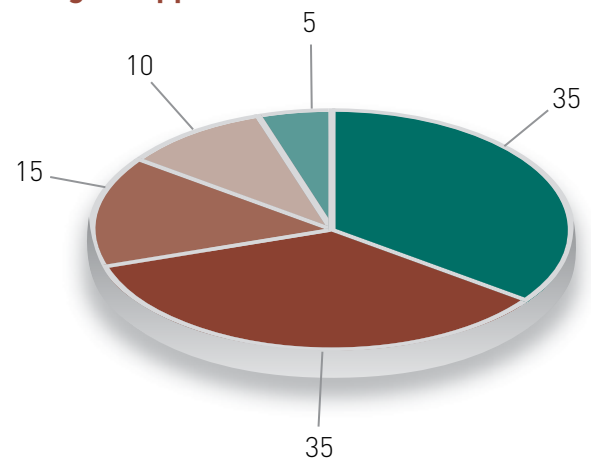
The tables and graphs in the preceding pages were generated by fDi Benchmark, a service of the Financial Times Ltd. (www.fdibenchmark.com). This search tool relies on industry-recognized databases and location assessments to appraise the attractiveness of countries, states/provinces and cities around the world for specific sectors and investment projects.

- ▶ The following Canadian and foreign cities selected for benchmarking contain clusters of medical-device manufacturers: Bangalore, Boston, Cambridge (UK), Chicago, Edmonton, Galway, Halifax, Indianapolis, Kitchener, Los Angeles, Lyon, Mexico City, Minneapolis-St. Paul, Montréal, Munich, Shanghai, Singapore, Toronto, Vancouver and Winnipeg.
- ▶ The model enterprise profile is a medical-device manufacturing plant with 150 employees, most of whom work in an industrial facility, with others located in a downtown office.

Medical-Device manufacturing plant

COST FACTOR	USAGE AMOUNT
Property	Square metres
Occupancy (downtown office)	1,200 m ²
Occupancy (industrial facility)	62,150 m ²
Utilities	
Electricity	38,400 100kWh
Industrial gas	54,480 m ³
EMPLOYEE TYPE	PROFILE HEAD COUNT
Logistics and purchasing	
Warehouse and distribution operative	4
Manufacturing	
Head of manufacturing	1
Production manager	1
Production operative (highly skilled)	10
Production operative (skilled)	35
Production operative (unskilled)	70
Quality control manager	2
Quality control specialist	8
R&D / Engineering	
Engineer	15
Administration	
Secretary	4
Total staff	150

Quality model properties / Weights applied



WEIGHTING MODEL OVERVIEW	WEIGHTING	
Labour availability and quality	35%	<div></div>
Presence of an industrial cluster	35%	<div></div>
General business environment	15%	<div></div>
Infrastructure and accessibility	10%	<div></div>
Living environment	5%	<div></div>

CANADA'S COMPETITIVE ADVANTAGES

Canada boasts many advantages and unparalleled potential: it is a place where businesses can achieve excellence on a global scale.

A HIGHLY EDUCATED WORKFORCE

Canada ranks second in higher-education achievement among members of the Organisation for Economic Co-operation and Development (OECD). (Source: IMD, *World Competitiveness Yearbook 2010*)

A WELCOMING BUSINESS ENVIRONMENT

The Economist Intelligence Unit rated Canada the number one place to do business in the G-7 for the next five years. (Source: Economist Intelligence Unit, *Business Environment Ranking*, March 2011)

A SOUND ECONOMY

Since the third quarter of 2009, Canada's economy has grown for six consecutive quarters and has now fully recovered job and output losses that occurred during the global economic crisis. (Source: Department of Finance Canada, Budget 2011)

FINANCIAL STABILITY

Over the past three years, Canada's banking system has repeatedly been declared the soundest in the world by the World Economic Forum.

LOW TAX RATES

Canada's overall tax rate on new business investment is substantially lower than that of any other G-7 country, while corporate tax rates are among the lowest in the G-7. (Source: Department of Finance Canada, 2010)

SCIENTIFIC RESEARCH AND EXPERIMENTAL DEVELOPMENT

Canada has a very generous Scientific Research and Experimental Development Program (SR & ED) and the lowest costs in R & D-driven sectors in the G-7. (Sources: KPMG, *Competitive Alternatives 2010*; OECD)

NAFTA

Canada's NAFTA advantage (North American Free Trade Agreement) gives investors access to more than 448 million North American consumers and a combined continental GDP of more than US\$16.3 trillion. (Source: World Bank, *World Development Indicators Database*, 2010)

A GREAT PLACE TO LIVE AND WORK

World-class universities; a universally acclaimed health-care system; clean, friendly cities; and spectacular scenery make Canada a great place to invest, work, live and raise a family. (Sources: United Nations Development Programme, *Human Development Report 2010*; Economist Intelligence Unit, *Global Liveability Report 2010*)



Invest in Canada.
We Take Care of Business.

Invest in Canada

Foreign Affairs and International Trade Canada
111 Sussex Drive
Ottawa, Ontario, Canada K1N 1J1

vp.investincanada.com

Catalogue Number FR5-38/10-2011E
ISBN 978-1-100-18402-9