2009

Invest in Canada
AEROSPACE

Canada

CANADIAN AEROSPACE SECTOR

RECENT INVESTMENTS IN CANADA

- In 2009, **Esterline/CMC Electronics** announced that it would invest nearly $150 million over the next five years in an R&D initiative in Quebec.
- **Boeing Technology Canada** expanded production in Manitoba with an estimated 200 new jobs in 2008.
- **Pratt & Whitney Canada** announced in 2008 that it would commit over $500 million over the next five years to establish an aerospace centre in Quebec. They have also expanded operations in Nova Scotia with a new investment totalling $45 million in 2008.
- **Goodrich Aerospace** of North Carolina announced a new $33.5 million R&D project in Ontario in 2007.

MAJOR GLOBAL INVESTORS IN CANADA

Atlantis Aerospace
Bell Helicopter
Boeing Canada Technology
Esterline/CMC Electronics
Eurocopter
GE Aviation
Goodrich
Honeywell
Lockheed Martin Canada
Magellan Aerospace
Messier-Dowty
Pratt & Whitney Canada
Rolls-Royce
StandardAero
Thales

LEADING CANADIAN COMPANIES

Avcorp Industries
Bombardier
CAE Inc.
Heroux-Devtek
Magellan Aerospace Corp.

With $US910 billion expected to be spent on the production of civil aircraft worldwide between 2007 and 2016[1], the global aerospace sector is poised for strong growth—Canada's aerospace industry, which includes over 400 firms across the country and a highly skilled workforce of 82,000, is well equipped to play a leading role in meeting the rising global demand.

In 2007, Canada's aerospace output ranked fifth in the world, as civil manufacturers generated revenues of over $17.5 billion[2]. In the same year, investment in R&D amounted to $1.2 billion in aerospace and defence[3].

Over 80 percent of Canada's domestic production is exported worldwide—more than any other country's aerospace industry. In the last several years, the bulk of growth in the Canadian aerospace sector has been in manufacturing, keeping pace with global investment trends.

Key Capabilities

Within the global value chain, Canadian aerospace firms have developed a number of product and process-related specializations.

- Regional and corporate aircraft: Canadian-based Bombardier is a leader in regional and business aircraft. Its CRJ Regional Jet is used by over 60 airlines worldwide, with over 1500 in active service.
- Gas turbine engines: Canadian firms supply one-third of global demand for small gas turbine engines.
- Commercial flight and visual simulators: Canadian-made products hold a 70 percent share of the world market for visual simulators.
- Commercial helicopters: Canada produces over 20% of global civil turbine helicopters.
- Landing gear: Canada supplies close to one-third of the world demand for landing gear, including manufacturing 60 percent of all landing gear for new, large aircrafts.
- Structural assemblies: Several industry leaders produce a wide range of structural assemblies in Canada.
- Avionics, including production of communications and in-flight entertainment systems.
- Aircraft, engine and component maintenance, repair and overhaul (MRO): Major MRO facilities in Canada include Magellan Aerospace, and StandardAero.

» Canada's aerospace industry ranks fifth in world output with revenues of over $17.5 billion

1 Teal Group Corporation. 2 Unless otherwise noted, all values are in Canadian dollars. 3 Aerospace Industries Association of Canada: 2007 Aerospace Industry Performance. *Unless otherwise noted, information pertains to civil aerospace industry only.

KEY CANADIAN CLUSTERS

Manitoba

Winnipeg is the largest aerospace cluster in western Canada, and is a major centre in North America for manufacturing composite aircraft components, and aircraft maintenance, repair and overhaul.

It is home to one of Boeing's ten major global sites for commercial aircraft, one of only three such sites outside the United States. Boeing's composite manufacturing facility in Winnipeg is the largest such facility in North America.

The cluster directly employs approximately 5,300 people, led by four global leading firms—Boeing Technology Canada, Magellan Aerospace, Aveos and StandardAero, one of the largest independent MRO firms in the world—plus 23 other established regional and national firms and several mid-sized aerospace suppliers.

British Columbia (BC)

Greater Vancouver, the province's main aerospace cluster, benefits from its proximity to Boeing's home in neighbouring Washington State. The cluster's aerospace strengths include: helicopter services, aero engine overhaul, multi-role aircraft maintenance, repair and overhaul, space systems, and advanced composite aerostructures.

The industry here is also supported by one of Canada's largest aerospace training centres at the British Columbia Institute of Technology.

Leading BC aerospace firms include ASCO Aerospace, Avcorp Industries, Cascade Aerospace, CHC Helicopter, Kelowna Flightcraft, MDA Corp., MTU Maintenance, Vector Aerospace and Viking Air.

Alberta

Alberta's aerospace and defence industry contributes $1.3 billion in revenue yearly to the economy, as well as over 5,000 jobs exclusive of airlines and airports, and exports 40 percent of its output. The province offers competitive strengths in robotics and unmanned vehicle systems (UVS); space science, geomatics and navigation systems; and maintenance, repair and overhaul. Over 50 aerospace companies are located in and around Calgary alone, with strong clusters in maintenance, repair and overhaul, and information communication technology. Major aerospace companies in Alberta include ATCO Frontec, Field Aviation, ITRES, Iunctus Geomatics, Pratt & Whitney, NovAtel, and Raytheon.

Saskatchewan

Saskatchewan's aerospace companies operate in satellite technology, wireless communication systems, atmospheric research and testing, synchrotron research and development, microelectromechanical devices, building structures, cases and harnesses, mini unmanned aerial vehicles and training programs. These organizations employ approximately 2,500 people.

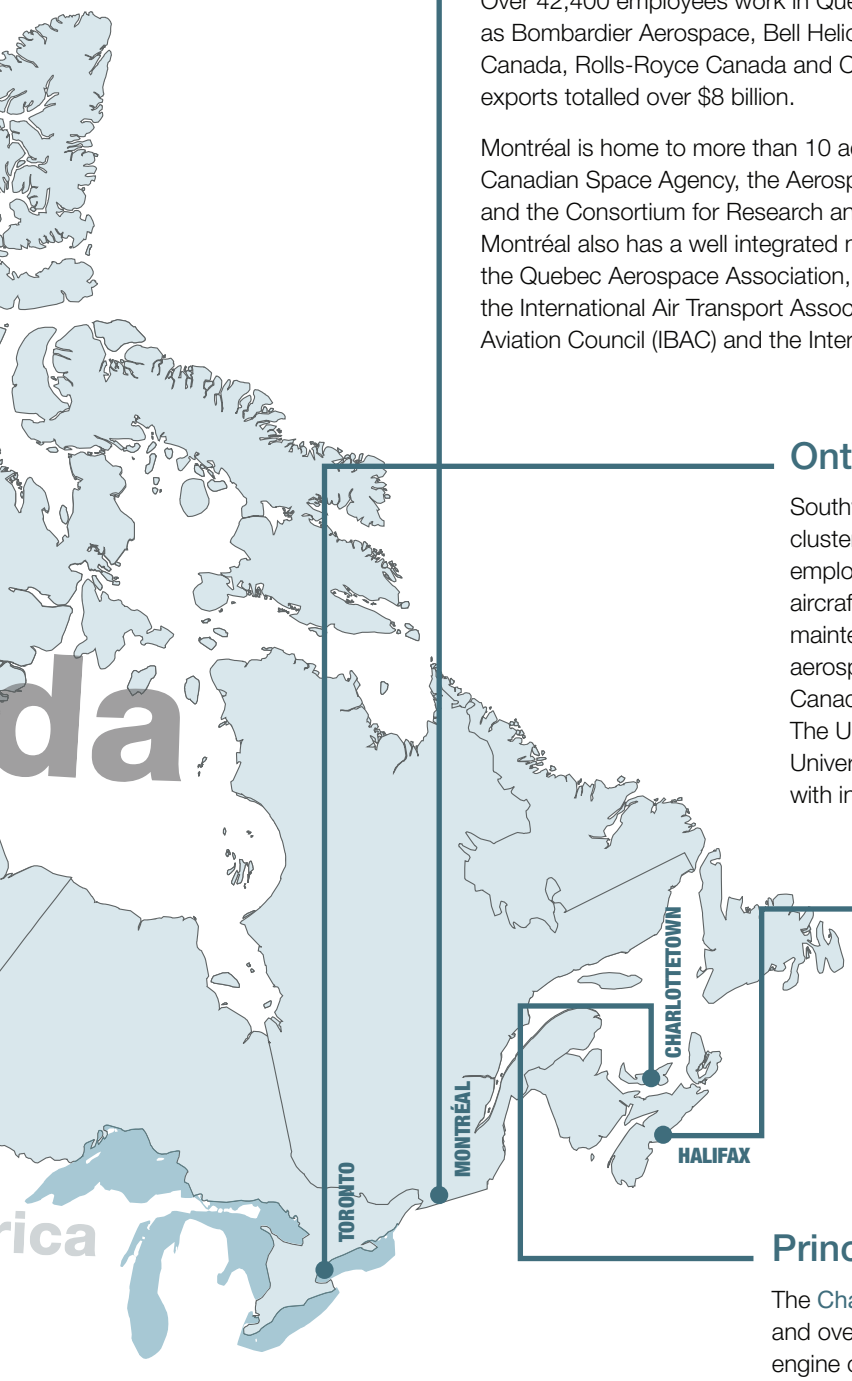
The province's aerospace companies are located near Saskatoon, including SED Systems, Vecima Networks, Scientific Instrumentations, Summit Structures, SBC Case and Draganfly Innovations.

Quebec

Montréal is the hub of Canada's largest aerospace cluster and is renowned for its expertise in aircraft assembly, engine manufacturing, maintenance repair and overhaul, avionics and landing gear.

Over 42,400 employees work in Quebec's aerospace industry for firms such as Bombardier Aerospace, Bell Helicopter Textron Canada, Pratt & Whitney Canada, Rolls-Royce Canada and CAE. In 2008 alone, Quebec's aerospace exports totalled over $8 billion.

Montréal is home to more than 10 aerospace research centers, including the Canadian Space Agency, the Aerospace Manufacturing Technology Centre and the Consortium for Research and Innovation in Aerospace in Quebec. Montréal also has a well integrated network of support agencies, hosting the Quebec Aerospace Association, Aéro Montréal and the headquarters of the International Air Transport Association (IATA), the International Business Aviation Council (IBAC) and the International Civil Aviation Organization.



Ontario

Southwestern Ontario represents Canada's second largest aerospace cluster with over 200 firms employing more than 20,000 skilled employees. Toronto, the core of this cluster, has key strengths in aircraft parts manufacturing, aircraft systems development, and maintenance and overhaul. Toronto also hosts many world-leading aerospace firms, such as Bombardier Aerospace, Pratt & Whitney Canada, Honeywell Canada, Magellan and Northstar Aerospace. The University of Toronto Institute for Aerospace Study and Ryerson University's Institute for Aerospace Design and Innovation collaborate with industry partners on numerous R&D projects.

Nova Scotia

Halifax is home to a number of world-renowned aerospace firms specializing in composite fabrication, electronic assemblies, simulation and modeling technologies, and engine manufacturing. These include Lockheed Martin, Pratt & Whitney Canada, IMP Group, EADS Composites Atlantic, C Vision and CAE.

Prince Edward Island

The Charlottetown cluster specializes in engine maintenance, repair and overhaul and the manufacturing of precision components, engine coatings and airplane interiors. Nine aerospace firms, including Honeywell Canada and Vector Aerospace Engine Services Atlantic, operate in the province, specifically as a part of Slemon Park, "home of Prince Edward Island's aerospace industry." Holland College's Aerospace Technology Centre provides a range of training opportunities for the burgeoning aerospace industry.

AEROSPA

METHODOLOGY

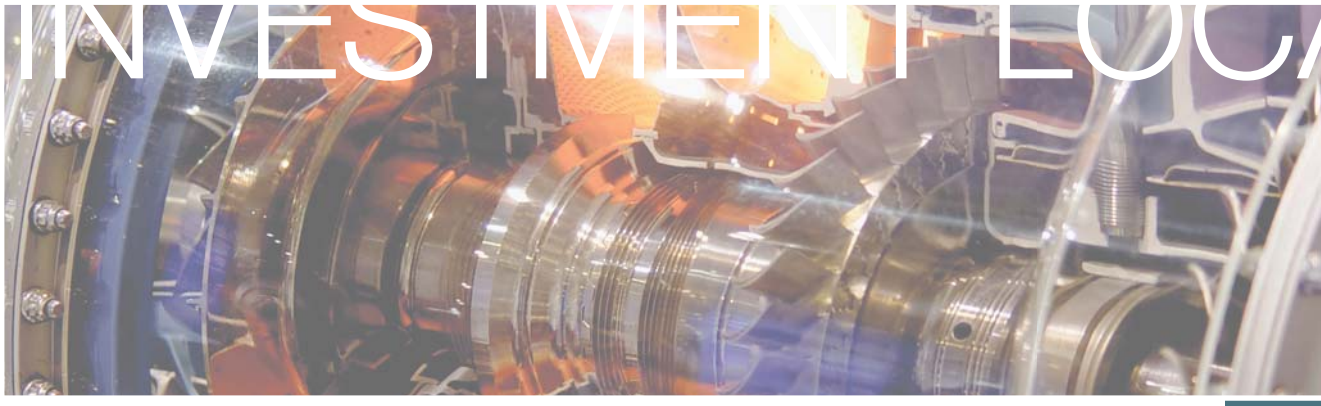
This benchmarking study assesses the competitiveness of a number of Canadian clusters against competing international business locations. Based on an investor's perspective, the research and analysis uses a representative investment project prototype (an operation that manufactures high value added aerospace components—see profiles 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 category and 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



INVESTMENT LOCATION BENCHMARKING

REPRESENTATIVE PROJECT PROFILE

GENERAL DESCRIPTION OF OPERATIONS

The manufacture of high value-added aerospace components

KEY PROJECT DRIVERS

- Availability of skilled personnel
- Proximinty to aerospace industries/cluster
- Presence of airports

OPERATING COST ANALYSIS PROJECT REQUIREMENTS FOR FINANCIAL MODELLING

LABOUR

(HEADCOUNT = 200)

Equipment and Systems Assemblers: 80

Avionics Technicians: 25

Production Managers: 20

Management and Administration: 25

Engineers: 40

Computer Systems Analysts: 10

SALES

CAD $40,000,000

PLANT AND MACHINERY

CAD $25,000,000

PROPERTY

Site: 8 acres

Building: 120,000 sq ft

UTILITIES

Power:

(Monthly Consumption) 500,000 kwh

Gas:

(Monthly Consumption) 1,500 MCF

Water:

(Daily Consumption) 15,000 gal

OPERATING ENVIRONMENT

GENERAL BUSINESS ENVIRONMENT » 10%*	» Availability of financial support & incentives; » Business permitting procedures; » Political stability; » Economic and financial stability; » Quality of support from local government & development agencies
LOCAL POTENTIAL TO RECRUIT SKILLED STAFF » 25%*	» Presence of experienced aerospace employees, including manufacturing related; » Presence of student population; » Overall size of labour market; » Overall tightness in labour market (unemployment)
PRESENCE OF INDUSTRY/CLUSTER » 25%*	» Market proximity; » Importance of R&D; » Presence of aerospace industry base
FLEXIBILITY OF LABOUR & REGULATIONS » 20%*	» Working time regulations; » Hiring & firing flexibility; » Industrial relations/attitude of unions; » Work permits
INFRASTRUCTURE & COMMUNICATIONS » 10%*	» Air access; » Highway network & congestion; » Quality & reliability of IT & tele-communications; » Reliability of power supply; » Availability of public transport; » Waterways and seaports
REAL ESTATE » 5%*	» Availability of large industrial sites
LIVING ENVIRONMENT » 5%*	» Cost of living; » Attractiveness for young international recruits; » Attractiveness for expatriates

*Factor category weight; corresponding location factors are ranked in order of importance.

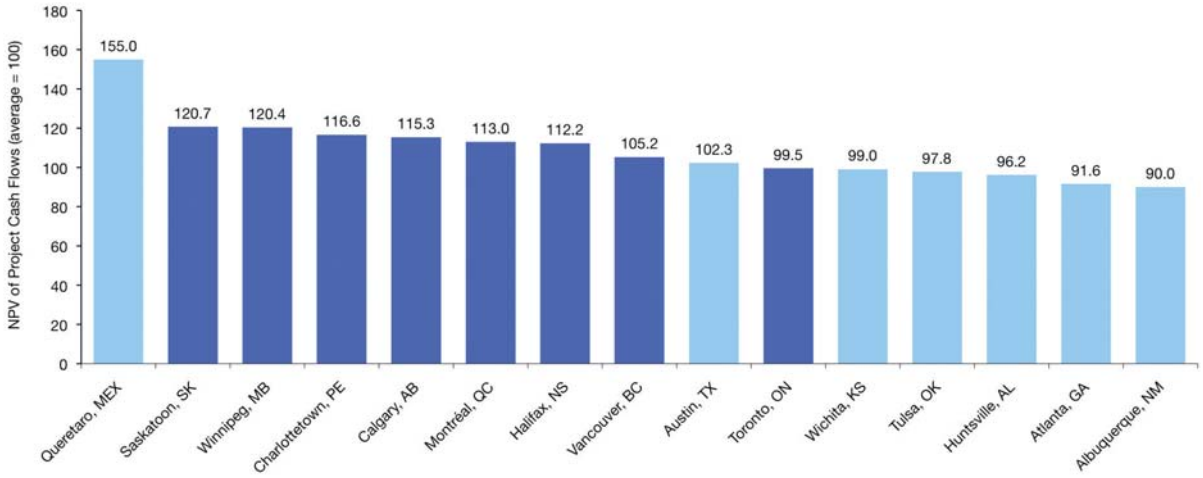
CANADA'S VALUE PROPOSITION

Investors in the aerospace industry will find some of the world's best locations in Canada and a range of established, cost-competitive aerospace manufacturing clusters with superior operating environments and highly experienced staff.

COST ASSESSMENT*

- Canadian
- Non-Canadian

C$1 = US$0.862 = MXN 10.9

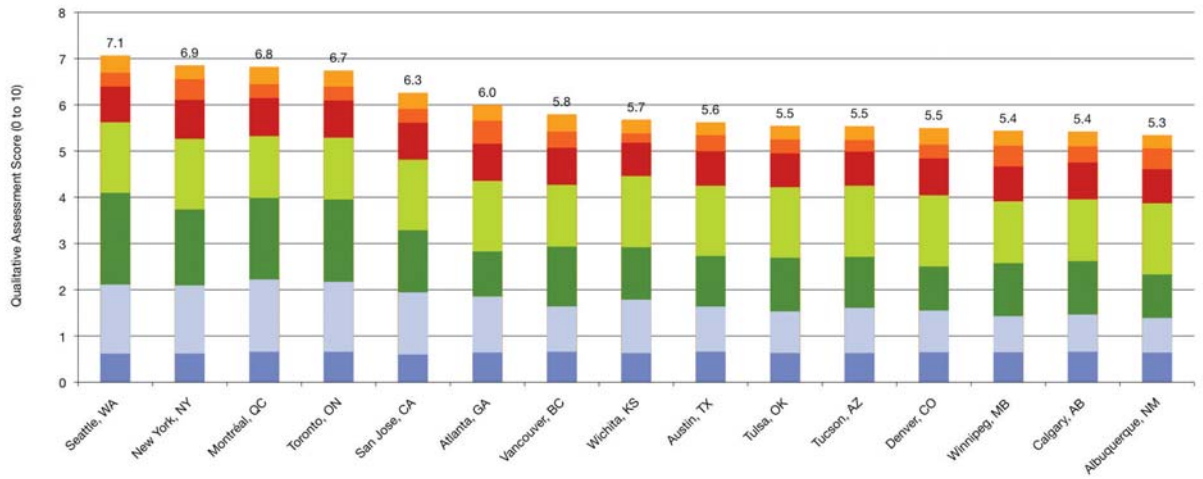


A better return on your investment

Among leading aerospace clusters in North America, Canadian cities like Saskatoon, Winnipeg, Charlottetown, Calgary, Montréal, Halifax and Vancouver represent some of the most financially attractive locations for aerospace investors. These cities, together with Toronto, represent eight of the strongest propositions in North America. The Mexican city of Queretaro may provide the highest profitability overall, but this should be considered in the context of qualitative trade-offs required to achieve the potential benefit.

QUALITATIVE ASSESSMENT OF OPERATING ENVIRONMENT*

- Living environment
- Real estate
- Infrastructure & communications
- Flexibility of labour & regulations
- Presence of industry/cluster
- Local potential to recruit skilled staff
- General business environment

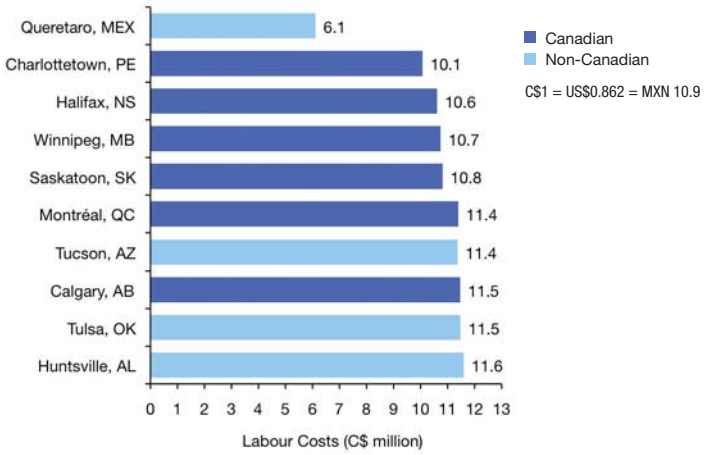


Strong clusters with a wealth of expertise

Several Canadian clusters are among the top ranked in North America. Compared to many other locations, Canada's three largest cities, Toronto, Montréal and Vancouver, also provide access to large pools of potential employees experienced in the manufacturing of aerospace components. Canadian cities, such as Winnipeg and Calgary, compare favourably with cities of similar size in North America, in areas such as the presence of related industries or clusters.

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

Estimated annual labour costs (highest-ranking cities)*



Competitive labour costs

The calculation of estimated annual labour costs for a typical aerospace component manufacturing operation shows the significant cost savings that several Canadian locations can provide compared to prominent U.S. alternatives.

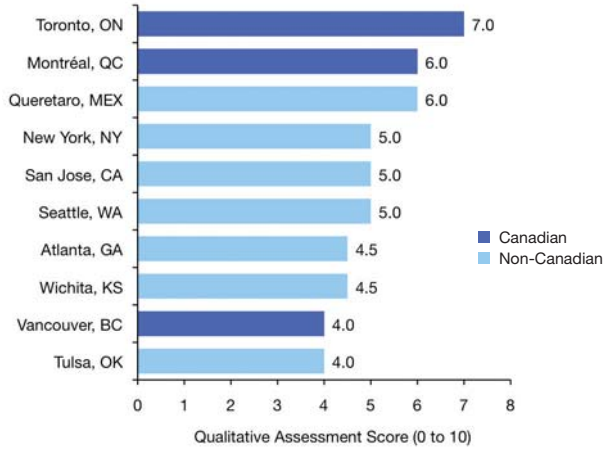
An important contributor to Canada's labour cost advantage relative to the United States stems from the lower costs of providing employee benefits. In Canada, most medical insurance is publicly funded, rather than paid by the employer, resulting in significant savings for employers.

A skilled and motivated workforce

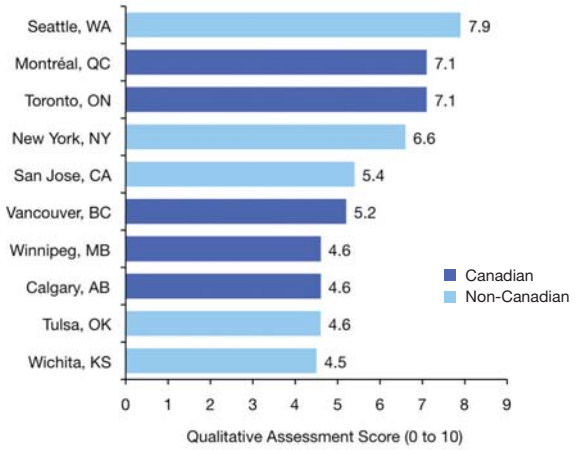
A critical consideration when establishing new aerospace equipment manufacturing facilities is the area's availability of potential employees experienced in the manufacturing of transportation equipment (whether aerospace, motor vehicles, railroad, ships or other), as well as the availability of labour experienced in fabricated metal manufacturing, electronic product manufacturing, electrical equipment appliance and other related operations. Such employees form the pool of trainable staff for a new operation.

Home to a highly productive and skilled manufacturing workforce, Canada has several cities that offer large pools of these trainable employees.

Presence of experienced manufacturing employees (highest-ranking cities)*



Presence of industry base/cluster (highest-ranking cities)*



Strong industry presence

The presence of a strong industry base is another important consideration when assessing aerospace manufacturing locations. Many factors play a key role, including: proximity to purchasers of aerospace components; access to steel, iron and aluminium production and manufacturing operations; access to electrical component manufacturers; size of the aerospace industry; and R&D.

Canadian cites such as Toronto, Montréal, Vancouver, Winnipeg and Calgary host large transportation equipment clusters that form potential markets for high value-added aerospace components. Many Canadian cities are also home to a large number of establishments producing aerospace products and parts, that form important clusters.

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

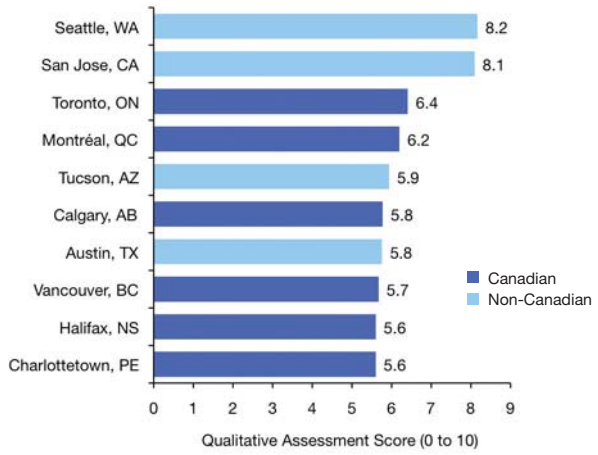
Cutting-edge R&D

Canada invests billions of dollars in universities every year to ensure that investors have access to some of the best talent and research and development infrastructure in the world.

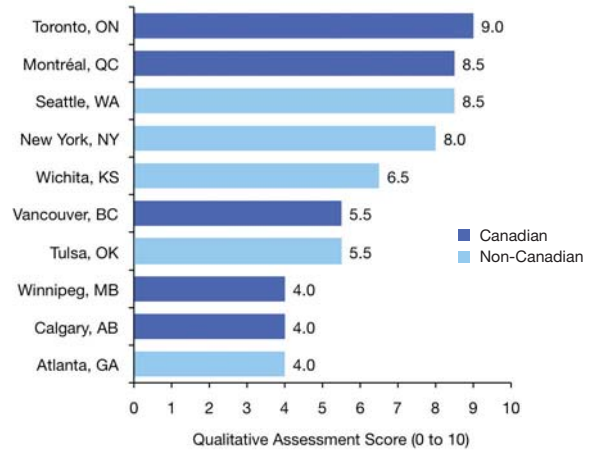
University support in terms of academic programs and R&D spending in areas related to aerospace is a key strength for several Canadian locations. IBM-PLI's study reveals that Toronto, Montréal, Calgary, Vancouver, Halifax and Charlottetown score well in an evaluation of university research & development. This assessment considers the per-capita spending on R&D and patents generated related to aerospace.

In 2007, Canada announced a new $900 million Strategic Aerospace and Defence Initiative (SADI) designed to support aerospace R&D in Canada over the next five years.

Research and development (highest-ranking cities)*



Proximity to market (highest-ranking cities)*



Markets of opportunity

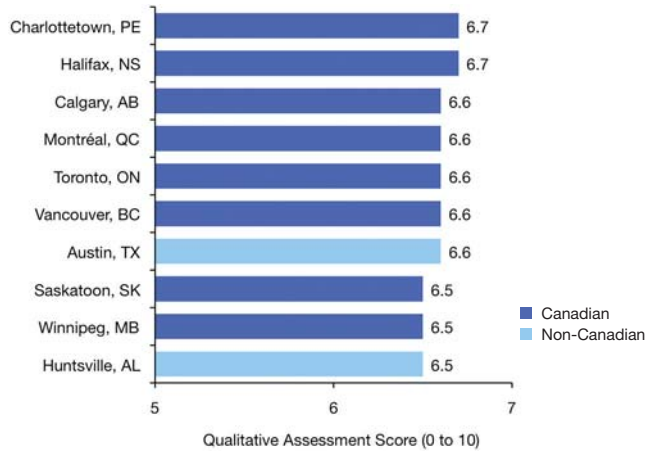
In the manufacturing of high value-added components, proximity to customers is important. Several Canadian cities rank in the top ten in IBM-PLI's evaluation of market proximity.

Market proximity considers the potential purchasers of high value-added aerospace components, taking into account the number of establishments involved with transport equipment manufacturing (including aerospace and other types of manufacturers) and the number of dedicated aerospace manufacturing facilities.

A conducive business environment

Thanks to its solid and dynamic economy, low corporate tax rates, generous R&D incentives, quality support from local governments and development agencies, and protection of intellectual property rights, Canada has fostered a business environment that allows companies to invest and grow. As the leader in GDP growth among G7 countries over the last decade, and with the world's soundest banking system[1], Canada provides a stable and strong business environment that offers tremendous growth potential and peace of mind for business investment. Charlottetown and Halifax rank particularly well because of their very supportive local economic development network.

General business environment (highest-ranking cities)*



*Unless otherwise noted, graphs represent IBM-PLI assessment scores. 1 World Economic Forum Global Competitiveness Report 2008-2009, October 2008.

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- 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

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