

SOFTWARE

Canada's competitive advantages

Canada 

Foreign direct investment in Canada's software industry

FOREIGN INVESTORS IN CANADA

- ABAS Software
- Adobe Systems
- Agfa HealthCare
- Autodesk
- CA Technologies
- Ceridian
- Cisco
- Dassault Systèmes
- eEye Digital Security
- EMC
- Entrust
- Facebook
- Fujitsu
- Google
- Hewlett-Packard
- IBM
- IneoQuest
- Intel
- Infor
- LinkedIn
- LookSmart
- McAfee
- Microsoft
- Oracle
- Progress Software
- SAP
- SAS Institute
- Salesforce
- Seiko Epson
- Société GRICS
- SunGard
- Symantec
- TEKsystems
- Xandros
- Xerox
- Wipro Technologies

- Foreign direct investment (FDI) in Canada's information and communication technologies (ICT) industry reached an accumulated \$19.94 billion* in 2011.¹
- Almost 250 foreign companies established greenfield FDI projects in the software and IT sector in Canada between 2003 and 2011.²

RECENT INVESTMENT EXAMPLES

Google

In 2010, Google announced expansion plans in Canada, including a new funding partnership with the University of Waterloo. Google already has 150 employees in its Canadian offices in Toronto, Montréal, Ottawa, and the Kitchener-Waterloo region. The Kitchener-Waterloo region has become Google's most important hub outside the U.S.

IBM

IBM recently launched its first formal research and development (R & D) lab in Canada through a \$175 million investment, in a consortium with seven Ontario universities. The federal and Ontario provincial governments are also backing the project, with Ottawa investing up to \$20 million and the province contributing up to \$15 million. The public/private collaboration, led by University of Toronto and Western University on the academic side, is expected to create 145 high-level research jobs in Ontario.

BridgeWays

In 2012, applications software company, BridgeWays—the leader in extending Microsoft System Center Operations Manager (SCOM)—opened a new R & D facility in Kanata, Ontario, creating 122 jobs. The facility will focus on product design, development and support.

Fujitsu

Fujitsu Canada recently launched the Fujitsu Innovation Center in the city of Québec. The \$20 million investment will create 50 highly skilled jobs. The centre is a collaborative space where business partners and customers will work with Fujitsu specialists to put ideas into practice and build business solutions.

Wipro Technologies

Wipro Technologies opened a new office in Mississauga, Ontario in 2011, as part of an expansion plan for its Canadian operations. The office will serve as the company's Canadian headquarters as it plans to intensify its focus on Canada as one of the strategic markets supporting the company's growth.

Mphasis

In 2012, Mphasis—a subsidiary of Hewlett-Packard (HP)—opened a near-shore centre in Prince Edward Island. The new location will enable the firm to work directly with its U.S. and Canadian operations. The centre will initially create 100 jobs, which will grow to 300 by 2014.

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

¹ Foreign Affairs and International Trade Canada, Trade and Economic Statistics (2012)

² fDi Markets database, fDi Intelligence from the Financial Times Ltd (2012)

Software innovation in Canada

INNOVATION SNAPSHOT

- The Canadian Innovation Commercialization Program was set up in 2010 to help businesses get their innovative products and services from the lab to the marketplace.
- The Ontario Centres of Excellence (OCE) is a government agency that fosters innovation in the industry. In 2009-10, Ontario universities received \$29.4 million in funding from the OCE.³
- The innovative environment has helped create leading technology companies in Canada such as OpenText and thousands of start-ups.
- The top 10 largest software companies in the world have R & D operations in Canada, such as IBM, SAP and Microsoft.⁴
- Between 2003 and 2011, over 12,000 software-related patents were granted by the United States Patent and Trademark Office to inventors based in Canada.⁵
- Preliminary gross domestic expenditure on R & D in Canada in 2011 was an estimated \$30 billion, one of the highest levels in the world.⁶

Case study: IBM

With over 2,500 employees, the IBM Toronto Software Lab is the largest R & D arm within IBM Canada and its third largest software lab worldwide. The Lab, which opened in 2011, partners with regional research institutions to recruit highly-skilled graduates and develop innovative partnerships. It has worldwide responsibility for developing a broad cross-section of IBM's global products, including leading-edge products such as WebSphere, e-commerce and DB2 information management technology.

Case study: OpenText

In 2012, OpenText officially opened the company's newest Innovation Centre at its headquarters in Waterloo, Ontario. The new Innovation Centre has been designed to reflect current best practices in software R & D innovation, including scrum teams, 'ideation' rooms, and video-conferencing capability to link R & D staff globally. OpenText operates around the world with annual revenues in excess of US\$1 billion.

Case study: Microsoft

Microsoft established the Vancouver Development Center as a base for some of the best and brightest software developers from around the world. It is recognized as a premier Microsoft Development Center with a direct impact on millions of Microsoft customers worldwide. Employees at the centre work on more than 50% of all the products and services offered by Microsoft across their business groups.

Case study: Trend Micro

In 2009, Tokyo-based Trend Micro, the third ranked cyber-security company worldwide by total revenue, acquired Ottawa-based Third Brigade. The Ottawa office is now the Canadian headquarters, and has a world development centre mandate for cloud computing and virtualized environments.

LEADING CANADIAN COMPANIES

- 20-20 Technologies
- Absolute Software
- BlueCat Networks
- Carlton Group
- CGI
- Computer Modelling Group
- Constellation Software
- Corel
- DeltaWare Systems
- DOSarrest
- Enghouse
- Halogen Software
- Hoot Suite
- Jurat Software
- Layer 7
- Mitel
- MKS
- Nightingale Informatix
- OpenText
- QNX Software Systems (RIM)
- Radialpoint
- Redknee
- Replicon
- Shopify
- Softchoice
- Syncapse
- Timeless Technologies
- The Descartes Systems Group
- Upside Software
- Vision Critical
- xwave

³ Toronto Region Research Alliance, ICT in the Toronto Region (2011)

⁴ Top 100 Research Foundation: Software Top 100, World's Largest Software Companies (2011)

⁵ fDi Benchmark estimates based on United States Patent and Trademark Office (2012)

⁶ Statistics Canada, Research and Development Expenditure (2012)

Canada's software industry

TESTIMONIALS

"Microsoft considers Canada to be a relatively large and untapped pool of exceptional talent. A great deal of cutting-edge research goes on in Canadian universities and within Canadian industry. It's no wonder that global technology companies such as Microsoft are keen to expand in this country."

Phil Sorgen

President
Microsoft Canada

"... there is room in this community for many different ways of innovating. There's more than enough talent [in Kitchener-Waterloo] to go around."

Steve Woods

Head of Engineering
Google Waterloo

Canada is home to the second largest number of global software companies.

In *Software Magazine's* 2011 ranking of the world's top 500 global software companies, 29 of the companies are headquartered in Canada, the second highest proportion after the U.S. In total, there are 32,700 ICT companies in Canada, of which 80% are in the software and computer services industries.

ICT sector revenues in 2010 were \$162 billion.⁷ In 2011, ICT Services generated a GDP of \$61.7 billion, or 4.8% of Canadian national income.⁸

The performance of the Canadian software market is expected to accelerate, with an anticipated compound annual growth rate of 2.6% for the five-year period 2010-2015.⁹ The Top 250 Canadian ICT companies increased sales to US\$82.62 billion in 2011. All of Canada's major ICT sub-sectors experienced growth with the ICT Hardware and Infrastructure sector (20.55%) achieving the fastest growth from 2010.¹⁰ Canada's largest independent software company, OpenText, increased sales by 13.3% to US\$1.05 billion in 2011.

ICT accounts for a third of all Canadian private sector R & D, employing more than 40% of R & D professionals. The booming ICT sector in Canada is expected to add an additional 106,335 jobs between 2011 and 2016.¹¹

CANADA'S KEY STRENGTHS IN SOFTWARE

Canada's highly skilled software development professionals, world-class R & D capability, competitive labour costs and taxation, and access to the U.S. market, make it an ideal location for value-added software development activities. Canada is the world's third largest video game developer and has attracted investment in wireless and new emerging technologies such as cloud computing as well as being a worldwide leader in photonics. Canada has strengths across several key segments:

Enterprise application software (EAS)

Canada is well positioned to tap into the global EAS market and has easy access to the world's largest IT market (the U.S.). Enterprise software spending in North America was an estimated \$121 billion in 2011. Canadian firms are leaders in EAS applications for customer relationship management, digital content creation, data, project and portfolio management, supply chain management and web conferencing. Canada's home-grown industry leader OpenText is joined by numerous international investors in Canada including Adobe Systems, IBM, Microsoft, Oracle, Sage Group and SAP.

⁷ Industry Canada, Canadian ICT Sector Profile (2012)

⁸ Statistics Canada, Gross Domestic Product at Basic Prices, Communications, Transportation and Trade (2012)

⁹ Research and Markets, Software in Canada (2012)

¹⁰ Branham Top 300 Tech Companies (2012)

¹¹ Information and Communications Technology Council, Outlook for Human Resources in the ICT Labour Market 2011-2016 (2011)

Cyber-security

Canada's commitment to fighting cyber crime offers companies opportunities to develop solutions targeting government, health care and the financial services sectors. In 2010, six companies located in Canada crossed the \$1 billion threshold for cyber-security revenue: Symantec, IBM, McAfee, Trend Micro, Checkpoint, and Cisco. Five of these top six companies carry out cyber-security R & D activities in Canada. Currently approximately 30 vendors have revenues over \$100 million. U.S. security software firm Entrust has its largest office located in Ottawa, Ontario.

Health IT

Leading multinationals located in Canada that offer e-health solutions include Microsoft, Agfa HealthCare, GE Healthcare, Philips Healthcare, IBM, Canon, Cerner, and Siemens. Canada spent \$3.6 billion on Health IT in 2010. This does not account for several areas like physician offices, private clinics, and dentists that do not receive federal or provincial funding.¹² Health IT has become a top priority sector and an area of great opportunity for companies, with Canada Health Infoway investing in a number of Health IT areas including electronic health records, electronic medical records, drug and lab systems, diagnostic imaging and telemedicine where Canada is a global leader.

SKILLS AND RESEARCH

Canada's ICT workforce is highly educated; 84% of all workers have university or college training and 71% hold a post-secondary graduate degree.¹³ In 2011, Canada's ICT sector employed an estimated 556,000 people. Half of these jobs are in software development. The country has a world-class higher education system with 22 Canadian universities appearing in the Top 500 Academic Ranking of World Universities 2011 and six universities appearing in the Top 100 Academic Ranking of World Universities in Computer Science, in which the University of Toronto is ranked tenth, worldwide.¹⁴ In 2010, a total of 1.2 million students were enrolled in Canadian universities in degree-related programs. Canadian universities conduct \$10 billion of research each year.¹⁵

Universities across Canada offer a range of computer science related undergraduate and postgraduate courses. There are over 100 university or college ICT R & D centres located in the Greater Toronto Area alone, with the University of Waterloo having worldwide recognition for R & D. Examples of software research centres in Canada include:

- Centre for Computational Mathematics in Industry and Commerce (University of Waterloo)
- Institute for Computer Research & Institute for Quantum Computing (University of Waterloo)
- The Waterloo Institute for Health Informatics Research (University of Waterloo)
- Centre for Global eHealth Innovation (Toronto General Hospital and University of Toronto)
- Centre for High Performance Computing (University of Saskatchewan)
- Laboratory of Combinatorial Mathematics and Computing Science (University of Québec)

The ICT industry is the largest private-sector R & D investor in Canada. Of the 22 Canadian companies that spend more than \$100 million on R & D, ten were in the ICT sector.¹⁶ In 2011/12, Research In Motion remained Canada's top corporate R & D spender, devoting nearly \$1.6 billion to research.¹⁷

TESTIMONIALS

"With the wealth of exceptional engineering talent in the area, [Canada] was the perfect choice for our new location."

Dr. Jean-Yves Dexmier

CEO

LookSmart

¹² Branham Group, Health IT Investment Drivers for Canada (2010)

¹³ Information and Communications Technology Council, Analysis of the labour force survey data for the information technology occupations, 2000-2010 (2011)

¹⁴ Shanghai Jiao Tong University, Academic Ranking of World Universities (2011)

¹⁵ Association of Universities and Colleges of Canada (2010)

¹⁶ Research Infosource, Canada's Top 100 Corporate R & D Spenders (2011)

¹⁷ Research In Motion, Fiscal Year 2011/2012 Annual Financial Report, (2012)

Software clusters

BRITISH COLUMBIA

Key strengths:

British Columbia's strengths include content management, SaaS (software as a service), e-commerce, security, digital video, and Web 2.0. Talent is drawn from the University of British Columbia, the University of Victoria, and Simon Fraser University.

Leading companies:

Microsoft Canada Development Centre, IBM Pacific Development Centre, Intel, Broadcom, 3M, Oracle, ABAS Software, and Seiko Epson.

ALBERTA

Key strengths:

The province is widely recognized for its expertise in custom programming, digital content creation, e-learning, and financial and process management software. Alberta's large resource sector has also generated a significant cluster of software companies specializing in energy and resource management, as well as geospatial and remote-sensing systems. The not-for-profit Cybera was established to spur innovation in cyber infrastructure.

Leading companies:

Oracle, HP Enterprise Services, Autodesk, and CGI (Alberta), Computer Modeling Group (CMG) (Calgary), Upside Software (Edmonton).

SASKATCHEWAN

Key strengths:

Saskatchewan is Canada's largest provider of business information management systems. The sector is supported by local incubators such as TRILabs, Springboard West Innovations, Ideas Incorporation and three Innovation Place business parks. There is a focus on mobile application (app) development with the University of Saskatchewan hosting Canada's first mobile application development course. The Province also hosts Canada's leading mobile social-media conference, the MoSo Conference.

Leading companies:

Vecima Networks, CGI, GE Healthcare, ISM Canada (IBM), Sasktel International and NetSecure Technologies. There are over 300 software providers including C-Factor Works, iTracks, iQmetrix, Vendasta, Picatic.com, and Tinyeye. Mobile application companies such as CollegeMobile, NoodleCake Studios, zu.com, GasBuddy, Open Store and Picatic are leading industry app stores globally.

MANITOBA

Key strengths:

R & D facilities in Winnipeg include the University of Manitoba's Engineering and Information Technology Complex, TRILabs, and the Eureka Project Business Incubator. The University of Winnipeg, the University of Manitoba and Red River College all offer education and skills training to meet the industry's labour needs.

Leading companies:

InfoMagnetics Technologies, Sierra Systems, EPIC Information Solutions, PCGI, Imaginet Resources, Momentum Healthcare, Online Business Systems, Protegra, Zywave, and Securis.



ATLANTIC PROVINCES

Key strengths:

Newfoundland and Labrador: Enterprise software and e-health in addition to companies focusing on customer relationship management, GPS applications, the oil and gas industry, marine technology, manufacturing, and education.

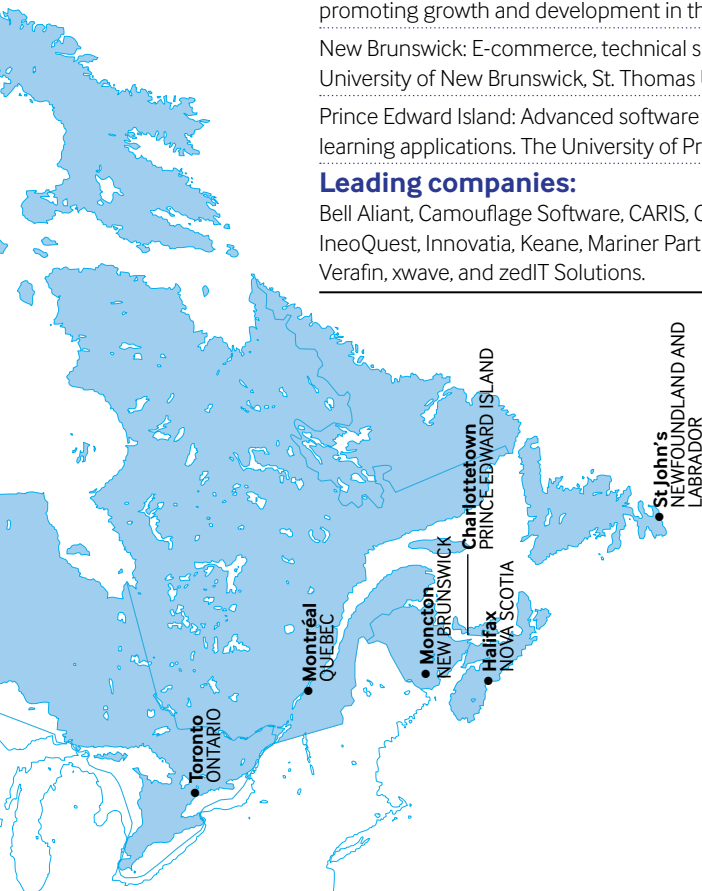
Nova Scotia: The sector is supported by Dalhousie University and Digital Nova Scotia, a non-profit organization committed to promoting growth and development in the IT industry.

New Brunswick: E-commerce, technical support, multi-media, e-learning and VoIP applications. Talent is drawn from the University of New Brunswick, St. Thomas University, and Mount Allison University.

Prince Edward Island: Advanced software development, health imaging applications, database development, and innovative learning applications. The University of Prince Edward Island provides skilled graduates.

Leading companies:

Bell Aliant, Camouflage Software, CARIS, CGI, ClearRisk, Cogsdale, DeltaWare Systems, eEye Digital Security, Greyfirst, IBM Canada, IneoQuest, Innovatia, Keane, Mariner Partners, Pathix, Plato Consulting, Q1 Labs, Q5 Systems, RIM, T4G, Timeless Technologies, Verafin, xwave, and zedIT Solutions.



QUEBEC

Key strengths:

Montréal's software sector is diversified, with strong vertical niches in electronic commerce, customer relationship management, and enterprise resource planning. Montréal offers a large number of graduates to software companies with four world-renowned universities and seven other institutions of higher learning, including two universities ranked in the 2011 Academic Ranking of World Universities in Computer Science (The University of Montréal and McGill University).

Leading companies:

IBM Montréal Software Lab, CGI, DMR (Fujitsu), Dassault Systèmes, Ericsson Canada, MediSolution, SAP and Société GRICS.

ONTARIO

Key Strengths:

Ontario's ICT industry is concentrated in Ottawa, the Greater Toronto Area (GTA), Niagara, Kitchener-Waterloo and London. There are over 17,000 firms providing 48% of Canada's ICT employment. Total ICT revenues are in excess of \$80 billion. The strength of university research in Ontario led to IBM, in 2012, announcing a \$175 million R & D investment in Ontario in collaboration with universities across the province.

Kitchener-Waterloo is known for global ICT leaders OpenText and Research in Motion (RIM). The city's 800 high-tech companies benefit from close linkages to Wilfrid Laurier University and the University of Waterloo. Widely recognized for their entrepreneurial spirit, University of Waterloo computer science graduates are sought by leading companies such as Google.

Toronto has the largest concentration of medium and large private-sector ICT companies in Canada. Furthermore, in terms of number of companies, the ICT sector in the Toronto region is North America's third-largest, behind San Francisco and New York. Companies present in Toronto attract high-quality graduates from the University of Toronto, Ryerson University, Centennial College and McMaster University.

Ottawa is home to numerous research institutes, including the National Research Council Institute for Information Technology and Carleton University's Advanced Real-Time Simulation Lab. The city's 2,700 ICT companies are supported by Invest Ottawa, the Canadian Advanced Technology Alliance (CATA), and the Information Technology Association of Canada (ITAC). Talent is drawn from the University of Ottawa, Algonquin College and Carleton University.

Leading companies:

Agfa HealthCare, Oracle, Sybase, McAfee, and Teledyne DALSA (Kitchener-Waterloo). Algorithmics, Platform Computing and Varicent (all recently acquired by IBM) and telecom software firm Redknee Solutions (Toronto). Mitel, Corel, and Software development labs run by IBM, Adobe and QNX Software Systems, a subsidiary of Research in Motion (Ottawa).

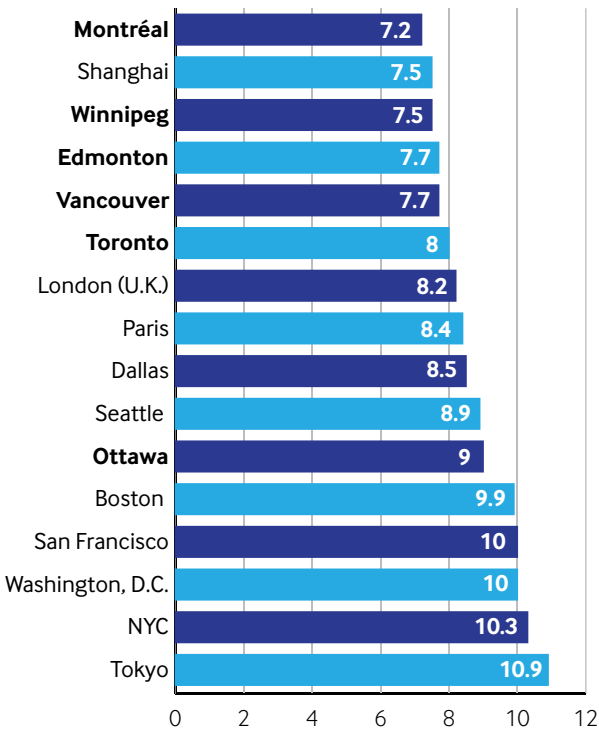
Canada's cost advantages

ADVANTAGE: LABOUR COST SAVINGS

Based on a typical software development centre facility, Canadian cities are very cost competitive, with labour cost savings ranging from \$2 million to \$3 million per annum compared to Tokyo and major U.S. locations.

Total labour costs (\$ million)

This chart shows total labour costs for a software development centre with a total head count of 100 people. Labour costs include employee salary plus statutory employer social security contributions. Private healthcare costs are also included for U.S. and Canadian cities.



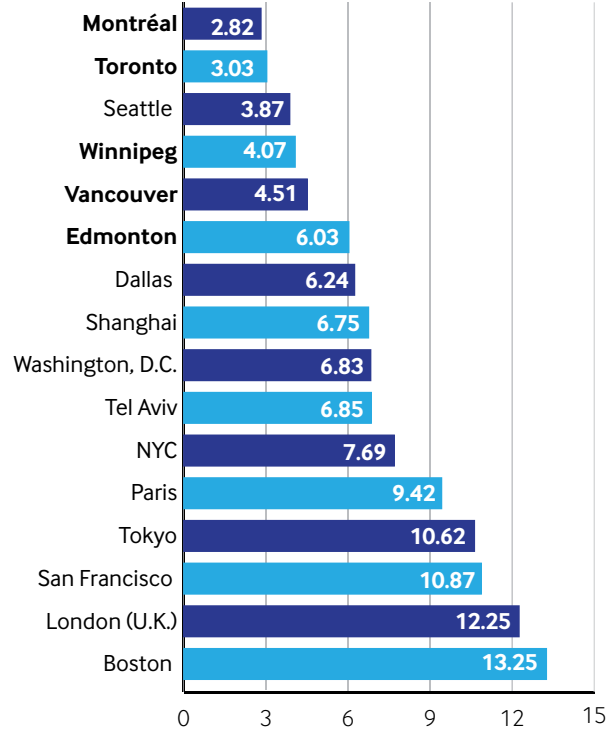
Source: fDI Benchmark Database, fDI Intelligence from the Financial Times (2012)

ADVANTAGE: MOST COMPETITIVE UTILITY COSTS

Electricity costs in Canadian cities can be significantly lower than costs in the U.S. and Europe. This creates substantial cost savings for companies and is a key advantage of Canada for data centres and cloud-computing operations

Electricity cost per 100 kWh (\$)

This table shows unit cost for electricity per 100kWh.



Source: Eurostat, United States Energy Information Administration and major energy providers (2011-2012)

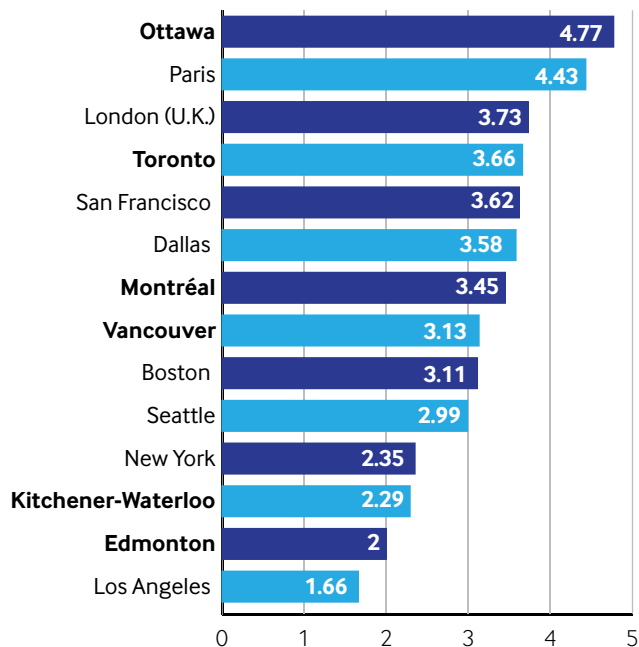
Canada's competitive advantages

ADVANTAGE: SIZE OF INDUSTRY-SPECIFIC LABOUR FORCE

Canadian cities have high proportions of their workforce employed within ICT services. Toronto has a higher proportion of ICT services workers compared to San Francisco, Boston and NYC. Montréal and Vancouver have a higher proportion than Seattle.

Proportion of employment in ICT Services (%)

This chart shows the proportion of the workforce employed in the ICT services sector.



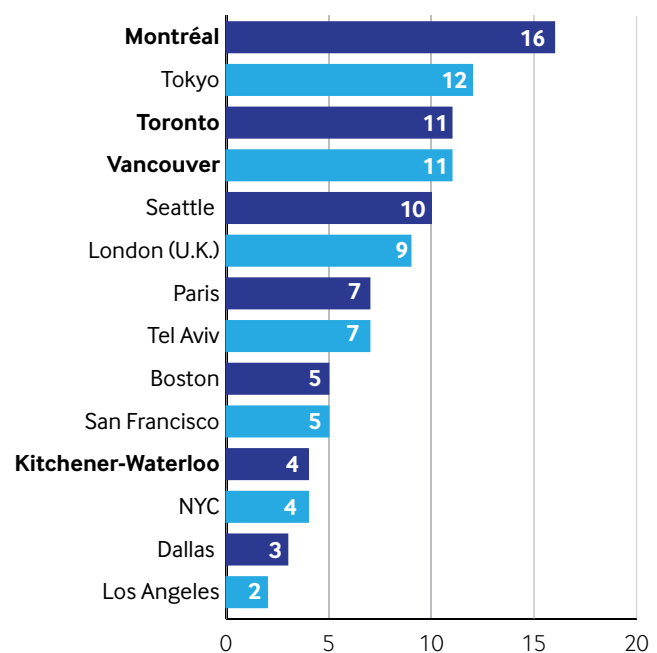
Source: Eurostat NUTS2 (2007/2008); Statistics Canada Census Metro Area (2006) and United States Bureau Labor Statistics MSA (2009) NACE 72, 64.2 / NAICS 517, 518, 5415

ADVANTAGE: TRACK RECORD IN ATTRACTING R & D SOFTWARE AND IT FDI

Canadian cities have attracted 67 greenfield R & D FDI projects in software and IT services. Montréal (16) has attracted the most projects of all Canadian cities, ahead of major U.S. and European locations.

Number of inward greenfield FDI projects in software and IT services

This chart shows the number of greenfield R & D software and IT FDI projects attracted by each city between 2003 and 2011.



Source: fDi Markets Database, fDi Intelligence from the Financial Times (2012)

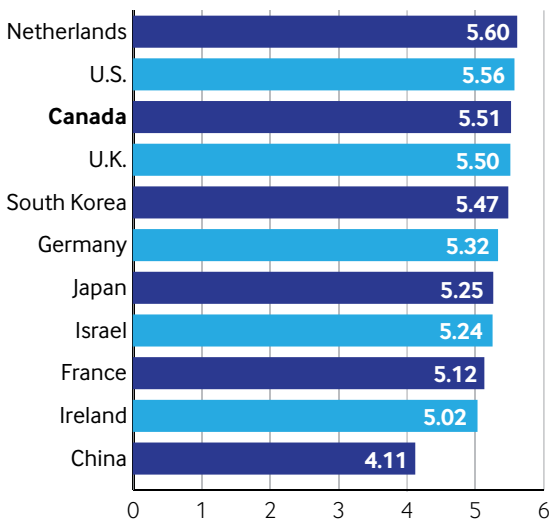
Canada's competitive advantages

ADVANTAGE: NETWORK READINESS

Canada is well positioned to exploit the opportunities offered in ICT, ranking ninth globally in network readiness, ahead of major Asian and European countries.

Networked Readiness Index (Rank 1-7)

This chart shows competitor locations and their overall network readiness, defined as a measure of their propensity to exploit the opportunities offered by information and communications technology. (1= worst; 7= best)



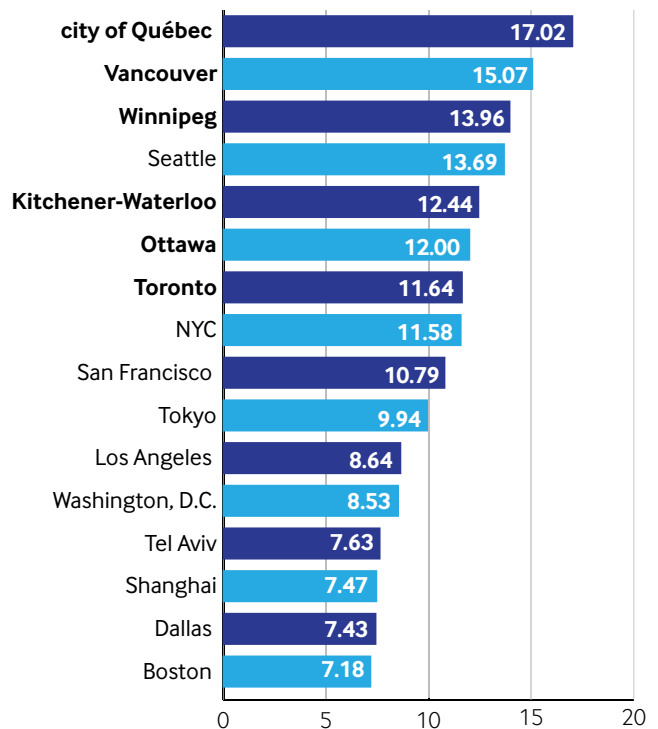
Source: World Economic Forum Global IT Report 2012

ADVANTAGE: INTERNET SPEEDS

Canada offers the fastest average download speeds compared to other major competitors in the U.S. or Asia.

Average download speeds (Mb/s)

This chart shows the average download speed of each city in 2012, measured in Mb/s.



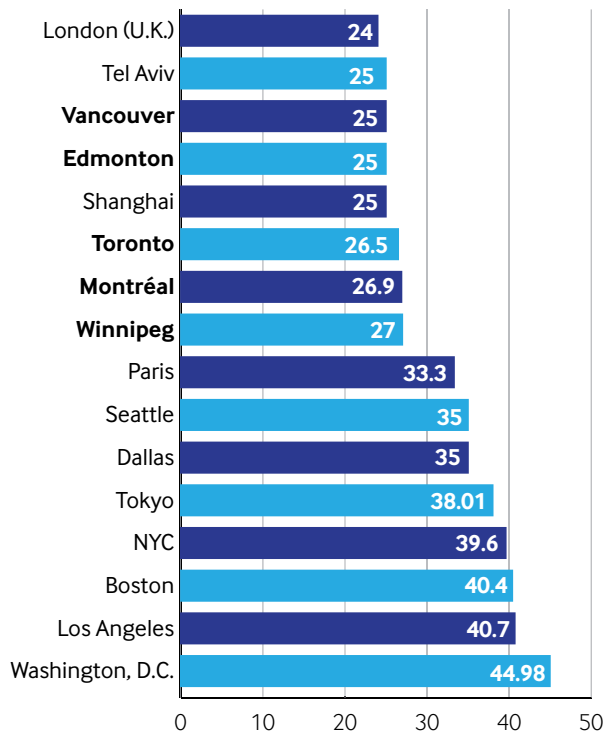
Source: fDi Intelligence from the Financial Times Ltd based on Ookla Net Index (2012)

**ADVANTAGE:
FAVOURABLE CORPORATE INCOME TAX**

Canada offers among the most attractive corporate income tax levels of any comparable country. Companies locating in Canadian cities can expect to pay lower corporate income taxes than the U.S., France and Japan.

Corporate tax (%)

This chart shows the corporate income tax rates payable by companies. Figures are expressed as tax payable as a percentage of companies' gross profit.



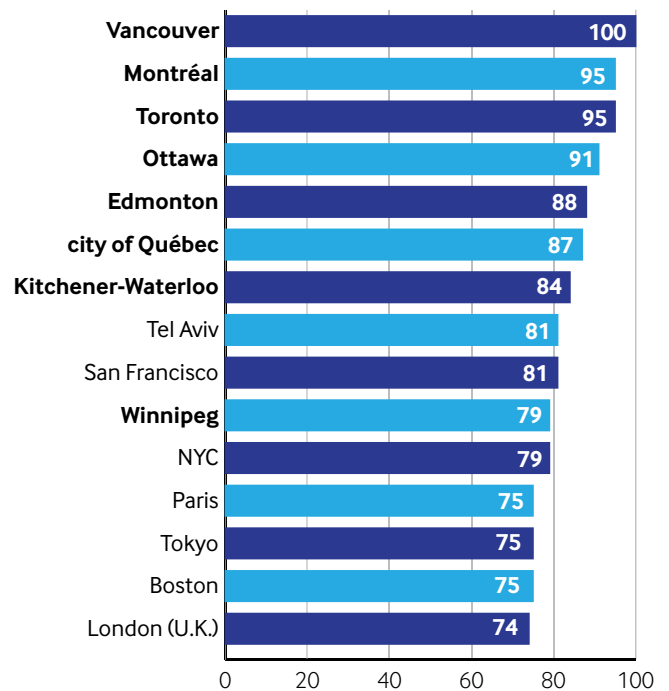
Source: KPMG (Country and Canadian Provinces; 2012) and Tax Foundation (United States; 2011)

**ADVANTAGE:
OUTSTANDING QUALITY OF LIFE AT AN
AFFORDABLE COST**

Canadian cities offer the highest quality of life in the world. Vancouver was rated the most liveable city in the world by the Economist Intelligence Unit in 2011 and also tops the fDi Intelligence index. Canadian cities are highest ranking when considering both quality of life and cost of living.

Attractiveness of cities

This chart shows the overall attractiveness of cities based on combining their quality of life and cost of living, with a 50% weight attached to each.



Source: fDi Intelligence from the Financial Times (2011). Vancouver = 100

Invest in Canada to achieve global excellence

A welcoming business environment

Canada is the best place to do business in the world.

Source: Forbes Magazine, October 2011

A growing economy

Canada has been the top performer among the G-7 in GDP growth over the 2008 to 2011 period.

Source: Consensus Economics, April 2012

A highly educated workforce

Canada has the highest proportion of post-secondary graduates among members of the Organization for Economic Co-operation and Development (OECD).

Source: Education at a Glance 2011, OECD

Financial stability

Over the past four years, Canada's banking system has repeatedly been declared the soundest in the world.

Source: Global Competitiveness Report 2009-2012, World Economic Forum (WEF)

Low tax rates

Canada's combined federal-provincial statutory corporate income tax rate of 26% is more than 13% below the U.S. and among the lowest when compared to G-7 countries.

Source: Department of Finance Canada and the OECD Tax Database 2012

Scientific research and experimental development

Canada offers some of the most generous R & D tax incentives in the industrialized world, with combined federal and provincial tax credits that can currently save foreign investors, on average, up to 30 cents on the dollar invested in R & D in Canada. Canada also has the G-7's lowest costs in R & D-intensive sectors (up to 10.7% lower than the U.S.).

Source: Department of Finance Canada and KPMG Competitive Alternatives, 2012

NAFTA

The North American Free Trade Agreement (NAFTA) gives investors access to nearly 457 million consumers and a combined continental GDP of about US\$17.2 trillion.

Canada continues to seek more free trade agreements with economic and emerging powers to increase trade and investment.

Source: World Bank, World Development Indicators Database, 2012

A great place to invest, work, and live

Canada is one of the most multicultural countries in the world, home to world-class universities, a universal health care system, and clean and friendly cities. Canada has the highest quality of life among G-7 countries and consistently ranks among the world's top countries in Human Development.

Source: Statistics Canada; United Nations Human Development Report, 2011; OECD Better Life Index, 2011



Invest in Canada

Foreign Affairs and International Trade Canada

111 Sussex Drive
Ottawa, Ontario, K1N 1J1
CANADA

vp.investincanada.com

Catalogue number:
FR5-38/6-2012E-PDF
978-1-100-20857-2



Follow us on Twitter!

[@invest_canada](https://twitter.com/invest_canada)

Suivez-nous sur Twitter!

[@investir_canada](https://twitter.com/investir_canada)