

# Information and Communications Technologies

Look to Canada! Look to the future!



Team Canada Inc • Équipe Canada inc

Canada



# Canada: Leading the World



## Telecommunications

Canadian technological expertise is world renowned. We are acknowledged leaders in the development of high-performance, high-capacity optical networks, in microelectronics and in technologies supporting the emerging wireless Internet.

Telecom leaders in Canada include **Nortel Networks** ([www.nortelnetworks.com](http://www.nortelnetworks.com)), **Alcatel** ([www.alcatel.ca](http://www.alcatel.ca)), **Mitel** ([www.mitel.com](http://www.mitel.com)), **SR Telecom** ([www.srtelecom.com](http://www.srtelecom.com)), **Ericsson** ([www.ericsson.se/CA](http://www.ericsson.se/CA)), and **Lucent Technologies** ([www.lucent.ca](http://www.lucent.ca)).

## Photonics

Photonics, the enabling technology of light, is booming in Canada. **JDS Uniphase** ([www.jdsuniphase.com](http://www.jdsuniphase.com)), the world's largest supplier of optical components has announced it will quadruple its output in the year 2000-01, while **Nortel Networks** ([www.nortelnetworks.com](http://www.nortelnetworks.com)) has recently announced its intention to increase its production by a factor of six. **Cisco** ([www.cisco.com/ca](http://www.cisco.com/ca)), **Marconi** ([www.marconicomms.ca](http://www.marconicomms.ca)), **ST Microelectronics** ([us.st.com](http://us.st.com)) and **Nokia** ([www.nokia.ca](http://www.nokia.ca)) all announced world-class optical research campuses in Canada. Venture capital for the sector is pouring in, start-ups are flourishing and global technology leaders are increasingly making Canada the preferred location for photonics investment around the world. Shouldn't you be here as well? Shouldn't you be considering Canada for your future photonics needs?

## Wireless

Canada is home to hundreds of dynamic young wireless companies — and some of the biggest international players.

From visionary Canadian giants such as **Nortel Networks** ([www.nortelnetworks.com](http://www.nortelnetworks.com)) to a tidal wave of our newer companies like **Sierra Wireless** ([www.sierrawireless.com](http://www.sierrawireless.com)), **724 Solutions** ([www.724.com](http://www.724.com)) and **Research in Motion** ([www.rim.net](http://www.rim.net)), innovative Canadian companies are designing the tools that have caught the imagination of the wireless world.

## Microelectronics

High productivity, skilled workers and competitive labour costs mean that Canada is the most competitive location among the G7 nations for electronic and telecom equipment manufacturing.

Canada has great expertise in microelectronics. Companies such as **PMC Sierra** ([www.pmcsierra.com](http://www.pmcsierra.com)), **Tundra** ([www.tundra.com](http://www.tundra.com)), **Mosaid Technologies** ([www.mosaid.com](http://www.mosaid.com)), **Cadabra Design Libraries** ([www.cadabratech.com](http://www.cadabratech.com)) and **Cadence Design Systems** ([www.cadence.com](http://www.cadence.com)) design, package and fabricate semiconductor chips and offer related engineering services. **Celestica** ([www.celestica.com](http://www.celestica.com)), **Matrox** ([www.matrox.com](http://www.matrox.com)), **ATI** ([www.atitech.com](http://www.atitech.com)) and **C-MAC** ([www.cmac.com](http://www.cmac.com)) offer memory chips, graphic cards and contract assembly.

## Electronic Commerce

Canada was the first G7 country up and running with an advanced e-commerce agenda. Our world-leading e-commerce policy environment guarantees personal information protection for consumers and businesses as well as confidential, secure, on-line transactions.





In 1999, Canada's e-com business was estimated at \$4.4 billion. It is expected to grow to \$151.5 billion by 2004. Canadian consumers already use electronic banking more than any other people in the world. A number of Canadian companies including **Entrust** ([www.entrust.com](http://www.entrust.com)), **Cebra** ([www.cebra.com](http://www.cebra.com)) and **Certicom** ([www.certicom.com](http://www.certicom.com)) supply cryptography, Public Key Infrastructure (PKI) technology and other leading-edge solutions for the global e-commerce market.

## Software and Services

Many of the 19 000 software and computer services firms in Canada dominate important market niches such as business intelligence and data mining, computer graphics, document management, security software and electronic commerce.

**Cognos** ([www.cognos.com](http://www.cognos.com)), for instance, is a world leader in business intelligence and enterprise applications development. The quality of **Corel Corporation** ([www.corel.com](http://www.corel.com)) products such as CorelDraw and WordPerfect is universally recognized. **Hummingbird Communications Ltd.** ([www.hummingbird.com](http://www.hummingbird.com)) boasts leading-edge Enterprise software for network connectivity and business intelligence. **Open Text Corporation** ([www.opentext.com](http://www.opentext.com)) offers collaborative intranet, extranet and e-community platform solutions, and **JetForm Corporation** ([www.jetform.com](http://www.jetform.com)) specializes in enterprise work flow and electronic forms.

## Multimedia

Canada has more than 1000 multimedia developers and publishers, many specializing in entertainment, education and corporate applications.

Canada's **CAE Industries** ([www.cae.com](http://www.cae.com)), **Tecsult** ([www.tecsult.com](http://www.tecsult.com)), **Rainmaker** ([www.rainmaker.com](http://www.rainmaker.com)), **Vertigo Technology Inc.** ([www.vertigo3d.com](http://www.vertigo3d.com)), **Alias/Wavefront** ([www.aw.sgi.com](http://www.aw.sgi.com)), **Mainframe Entertainment** ([www.mainframe.ca](http://www.mainframe.ca)), **Softimage Inc.** ([www.softimage.com](http://www.softimage.com)), **SideEffects** ([www.sidefx.com](http://www.sidefx.com)), **Vicom** ([www.loubanmedia.com](http://www.loubanmedia.com)), **PTM** ([www.ptm.ca](http://www.ptm.ca)), **Discreet Logic** ([www.discreet.com](http://www.discreet.com)) and **Toon Boom Technologies** ([www.toonboom.com](http://www.toonboom.com)) are among the world's leading multimedia innovators. **Electronic Arts** ([www.ea.com](http://www.ea.com)), one of the industry's biggest interactive entertainment software companies, recently built the largest multimedia studio in the world in Burnaby, British Columbia.

## Telehealth

Our strong telehealth industry is a natural by-product of our geography; by necessity, Canadian companies have had to develop tools and techniques to deliver quality health care and services across the ward — or across the world.

The Canadian telehealth industry includes smaller players such as service and turnkey companies, consultants and software developers as well as larger companies such as computer manufacturers and telecommunications carriers. Find out more at [www.strategis.gc.ca/telehealth](http://www.strategis.gc.ca/telehealth).

## Assistive Devices

Canadian expertise has led to the development and manufacture of innovative assistive technology for seniors and people with disabilities. The Canadian assistive devices industry is particularly strong in creating adaptive devices for people with low or no vision, assistive listening devices for the hard of hearing, and mobility aids.





## Invest in Canada, Invest in the Future



The vibrant Canadian ICT industry has attracted the attention of investors all over the world. Canadian telecommunications companies regularly form strategic alliances with offshore firms to increase distribution and foster new product development. Our enlightened regulatory environment makes it easy for Canadian businesses and their international partners to move innovative new products and services into the global marketplace.

Canadian companies already benefit from one of the world's best communications infrastructures. But investment in Canada offers even more — access to the most advanced development networks anywhere.

From Canada's National Test Network (at 6000 kilometres, the world's longest fibre optic network) to our all-optical CA\*net, Canada's high-speed networks open up whole new worlds of possibility. E-com, multimedia, distance learning, telemedicine, virtual reality, real-time audio and video — the potential is limited only by your vision.

By the way, just how fast is "high-speed"? Well, with a bandwidth greater than any commercial Internet link, Canada's CA\*net 3 can download the entire two-and-a-half-hour movie *Titanic* in one-fifth of a second.

Our advanced communications infrastructure wouldn't mean a thing without advanced R&D and exceptional R&D incentives. Our R&D tax treatment is extremely generous — full and immediate write-off for all qualifying direct and indirect current and capital expenditures in R&D. Your firm can significantly reduce R&D costs through direct investment or subcontracting in Canada — which in turn allows you to harness the innovative power of our dynamic technology clusters.

Canadian technology clusters generate a powerful synergy — knowledge workers in first-class research facilities produce the new technologies and leading-edge ICT solutions of tomorrow. These products and services generate their own entrepreneurial excitement, which attracts more bright minds to ICT, which leads to further innovation.

## A Critical Mass of Innovation



It's our "bright minds" that give us critical mass.

Fact: We have the highest rate of post-secondary enrolment in the world and we outpace all other G7 countries in per-capita expenditures on training and education.

Our leadership in skilled workers didn't come about by accident. Canada's traditional reliance on advanced communications technologies compelled our post-secondary institutions to create programs to meet the demand for highly skilled

ICT specialists. As a result, Canadian companies and research institutions draw upon a large pool of skilled knowledge workers attracted to leading-edge R&D.

Canadian knowledge workers are also less "footloose" than their counterparts elsewhere. A telling example is California's Silicon Valley, where ICT turnover rates are in the 15–20 percent range. Canadian turnover rates in major ICT centres are less than 5 percent. The difference in labour turnover translates into a labour cost benefit of 7–10 percent in favour of Canadian locations.



# Canada is Hot!

Yes, we know how others see us. They think Mounties, snow-capped mountains and winter. A big, peaceful country with friendly people and an abundance of natural resources.

## But hot? Who says?

- More than 500 000 skilled Canadian knowledge workers engaged in the most cutting-edge information and Communications Technologies work in the world say so.
- Savvy international investors who know that Canada is one of the hottest players in the hottest economic sector in history say so.
- Customers all over the world who have watched Canadian companies create the leading-edge goods and services that will power us into the future say so.

## A World in Change

We are all in the midst of a massive shift in the way we communicate with one another. Information and Communications Technologies (ICT) are reshaping political and economic reality — and changing the way we do business.

Monopolies are giving way to competition. Trade barriers are falling and globalization is rising. Economies of scale change on a daily basis. Technologies converge and new markets emerge. Mergers and acquisitions occur in all business sectors.

In less than a decade, the Internet has transformed the global village — and wireless Internet promises yet another dramatic leap forward. ICT are the

force behind a tidal wave of growth, change and economic potential that is unmatched in history.

## And where does Canada fit in?

### *Everywhere.*

Canada thrives on innovation. We offer some of the world's most advanced information technologies. We supply the leading-edge ICT products and services you need to stay competitive in a changing economic reality. And we have an exceptional ICT investment environment.

## Canadian Heat

- Canada leads the world in optical network R&D and satellite network technology.
- In the past two years, Canadian ICT firms have invested over \$100 billion in expansion and acquisition.
- Canadian companies can supply every single facet of an ICT infrastructure, from equipment design and manufacture, through advanced networking technology, to the software and services needed to run and maintain the infrastructure.
- Our businesses and research institutions draw upon a large pool of skilled knowledge workers attracted to leading-edge ICT research.
- Competitive labour costs mean higher profitability for your company.



## A Global Trader



International trade is critically important to the Canadian economy. Our trade in goods and services represents over 81 percent of our economic output, more than that in any other G7 country. Canadian ICT imports and exports continue to dominate our trade figures.

Canada is a geographical and economic crossroad, offering trading partners in Europe and Asia access to the world's richest economy. Under the North American Free Trade Agreement (NAFTA), trade with Canada means trade within the North American market — nearly 400 million people with a combined gross domestic product of more than US\$9.4 trillion.

- Canada and the U.S. have the world's largest trade partnership, with two-way trade averaging US\$1 billion a day.
- Canada has always enjoyed strong cultural and historical trade ties with Europe and Asia, and continues to work with international partners to our mutual benefit.
- Canada's location, skilled multicultural work force and involvement in Asia Pacific Economic Cooperation (APEC) makes it easy for us to develop and expand trade with our Asian partners.

## Best Quality of Life

In Canada, we recognize that trade and investment aren't simply matters of dollars and cents. Sometimes the intangibles are just as important as the ledger.

Canada is an outstanding place to live, invest and do business. According to the United Nations Human Development Report, Canada has the highest quality of

life of any country in the world. In fact, the same report ranked Canada as Number 1 for seven years in a row.

We have the lowest cost of living among the G7; our safe, clean cities are celebrations of cultural diversity; and our health care system is among the best — and least expensive — anywhere.

## Look to Canada, Look to the Future!



The world has truly become a global village. With advanced ICT, your customers can live right next door — or on another continent.

Grab the advantage with Canadian innovation. Investors around the world look to us for technological excellence, for enlightened research incentives and for access to bigger markets.

Look to the real Canada, where the brightest people in the world work on the ICT products and services that will light up tomorrow.

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