

Information and Communications Technology (ICT) Sector Profile^[1] - Upper Midwest, United States

Quick Facts

Market Highlights

- Combined spending on information and communications technology (ICT) goods and services by consumers and businesses in Minnesota totalled \$19.6 billion^[2] in 2006.
- ICT/high-tech products are Minnesota's largest export, representing approximately 38% of the state's total exports.

Opportunities

- ICT business spending in the near future will be directed at smaller-scale implementations of proven technologies and software. New ICT spending has focussed on improving manufacturing processes.
- The Twin Cities metro area has begun and will continue to install a wireless Internet network over the next few years.
- States within the region are aggressively planning for the adoption and use of interconnected electronic health records (HER) and related health information technology (HIT).

Key Players

- 3M is the largest ICT-related firm in the state; however it is a diversified manufacturer of consumer and industrial products, including a large number of non-ICT goods.
- The largest purely ICT firm headquartered in Minnesota is ADC Telecommunications
- The largest Canadian ICT firm operating in Minnesota is Celestica.
- The University of Minnesota works with private firms to commercialize research.

Business Environment

- Business culture in Minnesota is very similar to Canada's, even by U.S. standards.
- There are no tariff barriers to the importation of ICT products and services into Minnesota.
- Limits on foreign ownership apply to communications carriers. In 2002, Minnesota adopted one of the strictest privacy laws for Internet service providers (ISPs) in the United States.

1. Sector Overview

The United States Upper Midwest's ICT sector is home to many leading companies, mainly in Minnesota, one of the nation's main locations for the high-tech industry. Due to the Upper Midwest's proximity to Canada it is a potentially lucrative market for Canadian companies.

Just over one in thirty Canadian jobs are in the ICT sector, which contributed \$65.3 Billion to Canada's GDP (5.9% of the total GDP). Cross-border collaboration with the United States is a large factor in achieving these totals.

In 2006, the United States as a whole received 63.7% of all Canada's ICT exports (\$27.9 Billion). Highest ranking export items were (in descending order, with percentage of total ICT exports from Canada): Wired Communications Equipment (23.6%), Instruments (17.8%), Computer Equipment (17.3%), Electronic Components (14.3%), and Wireless Communications Equipment (11.6%).

The same year saw Canada import \$28.1 Billion of high-tech goods and services from the United States. Of this, \$505M can be attributed to the state of Minnesota.

The North Star state's total high tech exports for 2006 totalled \$5.8 Billion. This accounted for 38% of total exports, which amounted to \$15.2 Billion. Despite a national downturn in the ICT industry, over the past six years Minnesotan tech exports rose \$1.7 Billion. The state's two leading ICT subsectors were computers (and peripheral equipment) and electromedical equipment. Other substantial exports were: industrial electronics, semiconductors and photonics.

Minnesota's ICT industry is home to many software, hardware and storage companies including Lawson Software, Digital River, Navarre, and Daktronics. The local market presents growing opportunities for Canadian technologies as companies seek innovative solutions for emergent security, storage and communication concerns. Technologies including e-healthcare, storage, wireless communications, and RFID solutions present additional opportunities where there is marked Canadian capability.

The local business environment continues to be early adopters of technology as demonstrated by the emerging use of nanotechnology by industry leaders such as Entegris, Imation and Seagate. The intersection of information technology and health care applications such as imagining, diagnostics and device manufacturing highlight additional areas of market growth and opportunity. The market also has demonstrated an escalating demand for healthcare information management solutions driven by the presence of large health management organizations including Medica and UnitedHealth Group.

A leading Canadian company with strong ties and interest in the Upper Midwest market is Celestica. Their facility in Arden Hills, Minnesota employs over 500, which specializes in high mix, medium to low volume, high complexity electronics manufacturing. At this location, Celestica provides full turn-key supply chain management, prototyping, printed circuit assembly (PCA) and test, systems assembly and test, fulfillment and after-market services for major customers in the aerospace & defence, industrial, medical and telecommunications markets.

In 2006 Minnesota had 79,100 employees in the ICT sector, 2.8% of total employment in the state. This employment total ranked 16th nationally, and the percentage employed in the sector was higher than the U.S. average of 2.7%. The state continues to add high-tech jobs each year, with 2,700 added in 2006. Minnesota has 7,100 companies which can be classed within the ICT sector.

Consumer ICT spending in Minnesota for 2006 was \$4.6 Billion, around \$884 per capita, compared to a U.S. average of \$821. ICT spending by businesses amounted to \$16.4 Billion.

Minnesota has one of the United States' most well-established ICT sectors. The industry in the state continues to grow at a steady pace each year with regards to imports/exports and job creation. However, there are many opportunities for Canadian ICT companies. Interest remains stable as the local market is attractive due to size, proximity and diversity of potential customers.

2. Market and Sector Challenges - Strengths/Opportunities:

Proximity to Canada

The Upper Midwest's obvious strength is its proximity to the Canada-U.S. border. There are also 12 border crossing points between North Dakota and Manitoba. The Emerson, MB/Pembina, ND crossing is the second busiest international border crossing point in Western Canada/U.S., with almost 400,000 commercial crossings each year. The annual value of trade passing through Emerson/Pembina is approximately \$14 billion.

Minnesota currently shares 7 border crossings with Manitoba and Ontario. The Pigeon River Bridge crossing, midway between the Lake Superior ports of Duluth, MN and Thunder Bay, ON is a key trade gateway for the Upper Midwest.

The connection with Duluth looks set to flourish in upcoming years due to the expansion of the Asia-Pacific Gateway on Canada's West coast. The port of Vancouver has been increased in capacity and a new port built on Prince Rupert. Plans for a major transportation network are well under way, which will result in goods being moved more efficiently across the prairie region. It is expected that the port of Duluth will be utilized to ship these goods onward to points further East and South.

Movement of materials through Customs on a timely basis can be challenging during peak times (e.g. at the end of financial quarters). Minnesota's geographical location gives firms doing business in the state the flexibility to import and export goods through Customs offices at either Minneapolis or Chicago, thereby reducing reliance on only one Customs point.

Policy and Access

The Canada-U.S. Free Trade Agreement and the North American Free Trade Agreement (NAFTA) both committed the United States to eliminate tariff and non-tariff barriers to trade in enhanced communications services. U.S. carriers must provide non-discriminatory access to its basic network for the private and public use of Canadian firms doing business in the United States.

The provinces of Manitoba and Saskatchewan have each signed (and recently renewed) bilateral declarations to develop trade, including in information technology, with Minnesota.

Expected Sector Growth

Growth in Minnesota's ICT sector appears to be steady and forecasts are generally above U.S. averages expected over the next two years. Computer hardware spending for 2006 was just below \$4 Billion. This is forecast to increase steadily by 7.1% over the next two years:

| | \$ Mil. 2006 | % Ch. 2007 | % Ch. 2008 |
|----------------------------------|--------------|------------|------------|
| Computer hardware spending in MN | 3,963 | 7.1% | 7.1% |
| U.S. Average | n/a | 6.8% | 7.0% |

Computer software spending was just above \$2 Billion in 2006. This level is expected to grow in 2007 and even further in 2008:

| | \$ Mil. 2006 | % Ch. 2007 | % Ch. 2008 |
|----------------------------------|---------------------|-------------------|-------------------|
| Computer software spending in MN | 2,085 | 6.9% | 8.1% |
| U.S. Average | n/a | 6.7% | 8.1% |

Minnesotans spent over \$5.7 Billion on IT services. Growth is expected to exceed the national average for 2007 and match it in 2008:

| | \$ Mil. 2006 | % Ch. 2007 | % Ch. 2008 |
|----------------------------|---------------------|-------------------|-------------------|
| IT services spending in MN | 5,741 | 4.5% | 5.3% |
| U.S. Average | n/a | 4.2% | 5.3% |

Telecommunications spending was over \$10.1 Billion in 2006. This number is forecast to increase greater than the U.S. national average over the next two years.

| | \$ Mil. 2006 | % Ch. 2007 | % Ch. 2008 |
|-----------------------------------|---------------------|-------------------|-------------------|
| Telecommunications spending in MN | 10,165 | 2.1% | 2.7% |
| U.S. Average | n/a | 1.8% | 2.6% |

Overall, the ICT sector is forecast to be stable and increase in the next two years at a rate higher than the national average. Minnesota is one of the higher-spending states in terms of ICT goods and services.

Similarity to Canada's Business Environment

The Minnesota ICT industry is a small community characterized by a relatively tight social network. Business culture stresses a somewhat less formal approach in dress and negotiation, as well as a working day that allows for dinner at home with family.

Canadian firms doing business in the Minnesota market have characterized the business culture and "mind set" as very similar to and compatible with that of Canada and Canadian businesses, even when compared to other regions of the U.S. They also stress that while selling to the Minnesota market from Canada is possible, establishing a point of presence in the State provides a critical advantage.

Opportunities for Canadian Companies

The current environment will favour smaller-scale projects using proven technologies that provide short-term and concrete returns on investment. According to firms working in the Minnesota market, spending has focussed on gaining greater efficiencies from earlier investments made in enterprise resource planning (ERP) and customer relationship management (CRM) systems. Similarly, investments in new software and hardware are being implemented in a patchwork and targeted manner in order to improve existing system-wide infrastructure. This spending has focussed on manufacturing processes such as product design, engineering, materials and resource planning.

In 2006 the City of Minneapolis signed a 10-year contract with USI Wireless to provide Minneapolis with cutting-edge broadband technology. USI Wireless is a private company that will

own, build and manage the wireless network, making Minneapolis one of the first large cities in the United States to go wireless. It is likely that in the foreseeable future other cities in Minnesota such as St. Paul, Duluth and Rochester will follow suit.

Additionally, the states of Minnesota, Iowa and Nebraska have outlined aggressive e-health strategies geared toward efficient and secure patient record management. Nationally, Minnesota is recognized as a leader in the planning and implementation of e-health strategies and has committed to providing all residents with a consumer-controlled personal health record by 2015 that will provide a secure, portable, standardized solution.

Weaknesses/Threats:

Employment Decline

Minnesota is the 16th largest employer in the ICT sector with the US and employed 79,100 individuals in high-tech jobs in 2006. However, this number looks set to decline in 2007, with just under 1000 jobs expected to be lost. The figure is forecast to grow marginally in 2008, yet still below the national average:

| | 2006 | % Ch. 2007 | % Ch. 2008 |
|----------------------------|-------------|-------------------|-------------------|
| Total ICT employment in MN | 79,100 | -1.1% | 0.2% |
| U.S. Average | n/a | 0.6% | 0.6% |

This drop can be charged to a number of factors, including: outsourcing to Asia; faster-growing ICT regions elsewhere in the U.S.; lack of college graduates with ICT-related degrees.

Policy and Access Issues

The Minnesota government co-ordinates ICT procurement at the state and municipal levels. State departments and municipal governments can (although are not required to) select ICT hardware and service providers included on the government's Master Roster, a database of pre-qualified vendors to assist agencies in planning, designing, implementing and maintaining ICT project related services. All questions and requests regarding the Master Roster can be directed to the Minnesota Office of Enterprise Technology, which administers the program. More information about the program and ICT procurement procedures can be found at the Office of Enterprise Technology website: <http://www.state.mn.us/portal/mn/jsp/home.do?agency=OETweb>.

3. Sub-Sector Identification

Software: Key companies headquartered in the Upper Midwest include: Lawson Software, Digital River, Navarre, and Daktronics. Minnesota's computer software spending was just above \$2 Billion in 2006. This level is expected to grow increase beyond national averages over the next two years.

Hardware: Hutchinson Technology, Entegris, Seagate and Imation are the main players in the Upper Midwest's hardware sub-sector. Spending for 2006 in Minnesota was just below \$4 Billion. This is forecast to increase steadily by 7.1% over the next two years

E-healthcare: The U.S. market has demonstrated an escalating demand for healthcare information management solutions driven the Upper Midwest presence of large health management organizations including Medica and UnitedHealth Group, both located in Minnesota.

Recent initiatives set forth by the legislatures in Minnesota, Iowa and Nebraska have additionally fuelled interest and attention to this growing IT sector.

Canadian Government Contacts

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Foreign Affairs and International Trade Canada

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Internet: <http://www.infoexport.gc.ca>

Useful Internet Sites

- *Minnesota Chamber of Commerce* - www.mnchamber.com
- *Minnesota Department of Employment and Economic Development (DEED)* - www.deed.state.mn.us
- *Minnesota High Tech Association* - www.mhta.org

^[1] *The Government of Canada has prepared this report based on primary and secondary sources of information. Readers should take note that the Government of Canada does not guarantee the accuracy of any of the information contained in this report, nor does it necessarily endorse the organizations listed herein. Readers should independently verify the accuracy and reliability of the information.*

^[2] *All monetary amounts are expressed in Canadian dollars, unless otherwise indicated. Foreign exchange rate is based on CAD\$1 = USD\$1.07 on November 6th, 2007.*