The Ottawa Report 2007

Economic, Technology and Educational Indicators

Ottawa

OCRI

LEADING THE WAY FOR OTTAWA.

Table of Contents

The 2007 *Ottawa Report Report* is a publication of the Ottawa Centre for Research and Innovation (OCRI). This annual report provides an authoritative perspective on the most up to date economic and community indicators demonstrating that Ottawa-Gatineau is an optimal location for conducting business.

This report highlights the region's performance in 2006 based on factors that are the strength of the region's performance as an established technology centre. These include: the fourth largest population in Canada; a highly skilled and educated workforce; strong research and development activity; costs and tax advantages; entrepreneurialism and innovation; its position as a gateway to the world's largest consumer market; investment climate; and its world-wide recognition as one of the world's most intelligent communities.

For over 40 years, OCRI has been Ottawa's lead economic agency for fostering the advancement of the region's globally competitive knowledge-based economy. OCRI is a non-profit, partnership organization that operates on an annual budget that comes from a variety of sources including: municipal, federal and provincial government; membership fees; professional development programs; and private sector contributions.

OCRI promotes sustainable economic development to maintain Ottawa's high quality of life. For more information on OCRI and its programs visit www.ocri.ca. For information on the Ottawa region, and why doing business in Ottawa will give your company a competitive advantage, visit www.ottawaregion.ca.

Forward from OCRI's Chair and President

Garry Hannah
Chair

Jeffrey Dale
President and CEO

You find in your hands the 2007 edition of the *Ottawa Report*, a definitive and comprehensive reference tool for the Ottawa technology business community.

This annual report serves as an update on the health of the Ottawa Region based on key economic, technology and academic indicators for 2006. It seeks to emphasize Ottawa's strengths as a major economic centre highlighting the strength of Ottawa's outward-looking export economy and the region's ability to attract and retain business and critical talent.

This year's *Ottawa Report* features three key themes that highlight the economic foundation of the knowledge-based region:

- economic development;
- innovation and commercialization; and
- critical talent.

These themes allow us to examine the health and economic wellness of the region as it pertains to Ottawa's technology community.

The Ottawa Region has become Canada's focal point for advanced technology and innovation. The city's visionary corporate sector, highly educated workforce, and unique blend of research institutions make it the ideal place to advance new ideas and initiatives to sustain job creation, generate wealth, and create a position for Ottawa in the global economy.

Ottawa's knowledge-based industries experienced both tremendous success and unique challenges in 2006. As an innovation-driven economy, it is vital that there exists strong support for Ottawa's key competitive clusters. These clusters are the engines that fuel the region's economy, driving most of the overall economic growth, and remain key to improving the standard of living for all of Ottawa's citizens. This growth is expected to continue in 2007, but the industry will need to take steps to ensure that Ottawa develops and retains the skilled and highly educated workforce necessary for growth.

But as Ottawa's economy becomes increasingly global and the industry base more diversified, new challenges and opportunities are appearing. This includes bridging the gap between innovation and commercialization; attracting and retaining critical talent; and increasing access to risk capital for our start-ups so as to ensure prosperity for the region. Science and technology also continue to drive Ottawa's economic growth and development; therefore, actively encouraging growth within these industries remain vital to Ottawa's success.

We would be remiss if we did not acknowledge the dedicated volunteers and organizations responsible for administering OCRI's various activities and programs. On behalf of the OCRI Board of Directors, sincere thanks is extended to the tireless individuals who have truly dedicated themselves to making Ottawa a respected and renowned city of limitless growth and potential.

Gary Hannah
Chair, OCRI

Jeffrey Dale
President and CEO, OCRI

Ottawa Region

In addition to its role as the capital of Canada, the Ottawa Region is the fourth largest metropolitan region in the country. It resides on the border of Ontario and Quebec on the south bank of the Ottawa River where it meets the Rideau River and Rideau Canal.

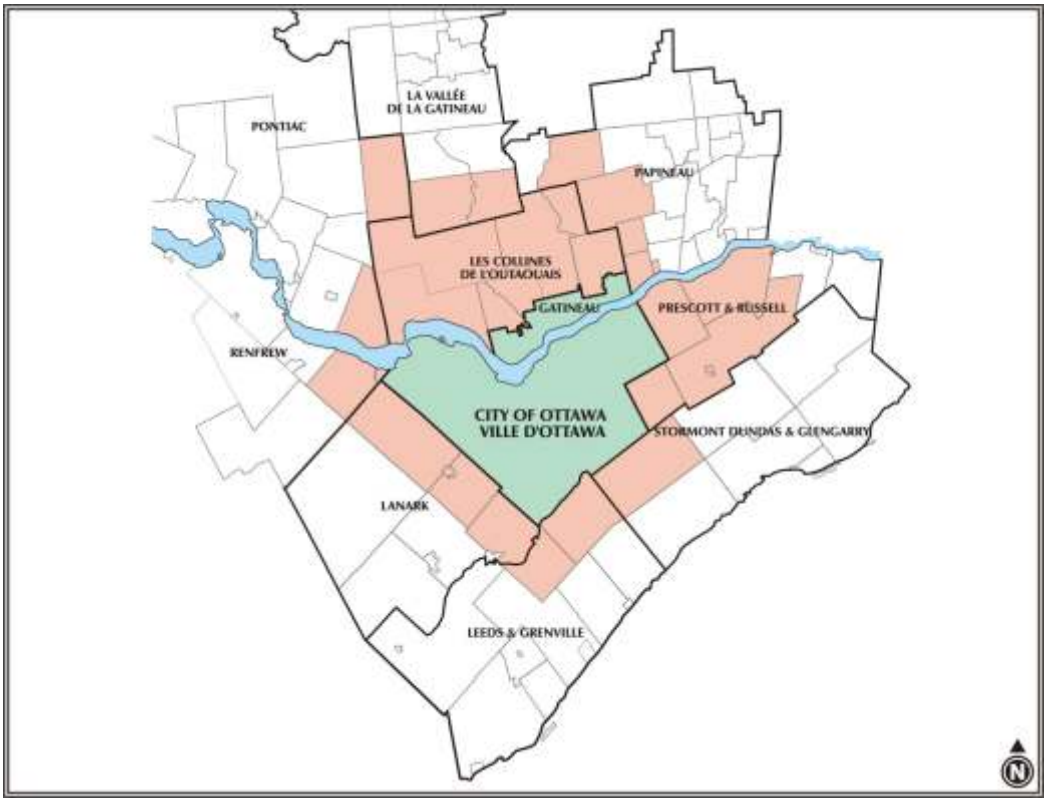
The Ottawa Region is unique in that it is the only major metropolis that straddles two provinces. For the purposes of this report, the Ottawa Region encompasses:

- the census metropolitan area of Gatineau;
- the census metropolitan area of Ottawa;
- the Ontario municipalities adjacent to Ottawa; and
- the Québec municipalities adjacent to Gatineau.

At the end of 2006 the population of the Ottawa metropolitan region was just over 1.3 million. Of this total, two-thirds live in the City of Ottawa, 19 per cent in the Ville de Gatineau, 11 per cent in Ontario Municipalities Adjacent to Ottawa and 4 per cent in Québec Municipalities Adjacent to Gatineau.

In the surrounding municipalities that are included as part of the greater metro area, between one-quarter and three-quarters of the employed labour force commutes to Ottawa and Gatineau to work.

Map of the Ottawa Region



Source: City of Ottawa

Ottawa's Competitive Advantages

As Canada's capital and fourth largest metropolitan region, Ottawa features extensive global connections via its business and government centres, diplomatic core and extensive international trade links. The world-class municipality boasts the sophistication, stature and amenities of an international business and technology centre.

Strongest Economic Activity in Canada

A recent study by the Canadian Imperial Bank of Commerce (CIBC) showed that Ottawa had the strongest momentum of economic activity in Canada during the first quarter of 2006.

Source: *CIBC Metro Monitor*, *June 2006*

One of the World's Top Seven Most Intelligent Cities

The Ottawa Region was selected by the Intelligent Community Forum (ICF) as one of the world's Top Seven Intelligent Communities, based on demonstrating excellence in broadband communications, knowledge workforce, innovation, digital democracy and global marketing.

Source: Intelligent Community Forum, 2006

The Most Educated Workforce in Canada

The Ottawa Region's current workforce has the highest percentage of university graduates in the country, and the highest concentration of PhDs in North America, tied with Boston.

Source: Statistics Canada Census, 2001

A Research Intensive Community

The Ottawa Region was one of Canada's Top Three Research Communities in 2006. The region ranked number one in Corporate R&D per capita and ranked number one in percentage of labour force in natural and applied scientists.

Source: RE$EARCH Infosource, November 2006

Top 20 in the World for Quality of Life

The Ottawa Region currently ranks as the 18th best city to live in the world. Consistently ranking in the top 20, Ottawa has increased in rank by two spots in the last year.

Source: Mercer HR Consulting Quality of Living Survey, 2006

The Least Expensive Canadian City

The Ottawa Region remains the least expensive Canadian city according to the latest Cost of Living Survey from Mercer Human Resource Consulting, the global leader for HR and related financial advice.

Source: *Mercer HR Consulting Worldwide Cost of Living Survey, June 2006*

A 4.9 per cent Cost Advantage Relative to the U.S.

Canada leads the G7 countries for low business costs, with a 5.5 per cent advantage over the United States.

Source: KPMG Competitive Alternatives Study, 2006

Second Highest Concentration of Science and Engineering Employment in North America

The Ottawa Region has the second largest concentration of science and engineering employment out of 316 North American cities, surpassed only by Silicon Valley. One in nine employees is a scientist or engineer.
Source: Statistics Canada, May 2006

Canada's Most Connected City

Census data shows Ottawa ranks 1st among 20 Canadian cities for internet use in the home; 78.9 per cent of households in the city have at least one regular internet user. Additionally, according to the 2005 survey of household spending, Ottawa was the most wireless city, with 80 per cent of households having a cell phone.
Source: Statistics Canada, 2005

A Bridge to the Largest Consumer Market in the Word

Close to the U.S. border, Ottawa is only a two hour flight away from over 200 million people. Ottawa is located on the border of Ontario and Quebec, approximately 400km (250 miles) east of Toronto and 190km (120 miles) west of Montreal.

Source: OCRI Global Marketing Technology Industry Survey

An Established Global Technology Centre

The Ottawa Region's key industries include telecommunications, photonics, semiconductor, wireless, software, security and defence, customer technical support centres and life sciences, employing nearly 80,000 people.
Source: OCRI Global Marketing Technology Industry Survey

Strong Mix of Multinational Organizations and SME's

The Ottawa Region houses several multinational giants including Nortel Networks, Alcatel-Lucent, Cognos, Cisco Systems, MDS Nordion, IBM, Dell, RIM, and Corel.
Source: OCRI Global Marketing

A Professional Services Industry Supporting Ottawa's Advanced Technology Sector

Ottawa's professional services providers have expanded and matured with Ottawa's technology companies, offering value-added world class services tailored to an active globally competitive technology community.
Source: OCRI Global Marketing

Strong Entrepreneurial and Investment Climate

The total amount of undisclosed and disclosed venture capital investments in the Ottawa Region amount to over $5.4 billion. Of this amount, $4.4 billion has been disclosed to the OttawaCapitalNetwork.com.
Source: OttawaCapitalNetwork.com

Ottawa Region Key Indicator Summary

For information relating to source data or disclaimers, refer to Appendix 1.

	2006	2005	Indicator Change
ECONOMIC DEVELOPMENT			
Population	1,316,830	1,294,946	2%
Building Permits (singles and multiples)	2,154,980	2,243,935	-4%
Housing Starts (singles and multiples)	8,808	7,105	24%
Vacancy Rate, Ottawa Office Market, Quarter by Quarter	6.5%	8.2%	-2 pp
Consumer Price Index (percentage change)	1.6%	1.8%	-0.2 pp
GDP (1997 $ B)	$ 41.5	$ 40.5	3%
Personal Income per Capita	$ 39,168	$ 36,731	7%
Retail Sales ($ B)	$ 13.7	$ 13	5%
Household Expenditures, Reading Materials and Printed Matter	$ 422	$ 511	-17%
Number of Conventions	996	1,198	-17%
Hotel Occupancy Rates	69%	65%	4 pp
Unemployment Rate	5.2%	6.6%	-1.4 pp
Employment	643,300	618,500	4%
Private Sector Employment	413,500	384,600	8%
Public Sector Employment	215,600	218,000	-1%
Non Profit Sector Employment (000's)	14,200	15,900	-11%
Companies in Knowledge-Based Industries	1,803	1,811	-0.4%
Employees in Knowledge-Based Companies	79,466	76,126	4%
Companies in Knowledge-Based Industries by Size	50% of companies have 1-9 employees; 34% have 10-49 employees; 9% have 50-99 employees		
Companies in Knowledge-Based Industries by Cluster	40% technology services; 19% software; 8% e-business; 7% defence and security; 7% telecommunications		
Employees in Knowledge-Based Companies by Cluster	36% technology services; 18% telecommunications; 12% software; 10% defence and security; 8% customer centre		
Knowledge-Based Industry Employers in Ottawa	Nortel: 5,000 employees; Bell Canada: 3,000; Calian Technologies Ltd.: 2,200		
Knowledge-Based Industry Employee Gainers	Dell Canada Inc.: +1,200 employees SITEL Corporation: +760 employees CGI: +600 employees		

Ottawa Region Key Indicator Summary

	2006	2005	Indicator Change
INNOVATION AND COMMERCIALIZATION			
Sponsored Research Income, Universities (000's)	$ 314,148	$ 270,434	16%
Corporate Research Income, Universities (000's)	$ 37,158	$ 25,113	48%
Research Intensity, Universities	$ 370,197	$ 340,904	9%
National Ranking, Research Intensive Universities	University of Ottawa: 8th Rank; Carleton University: 18th Rank; Université du Québec en Outaouais: 52nd Rank		
Corporate R&D Expenditure within Ottawa companies listed in Top 100 R&D Spenders (000's)	$ 2,801,942	$ 3,067,902	-9%
Top 100 Corporate R&D Spenders by Industry Sector	92.3% communications and telecommunications equipment; 6.37% software and computer services		
Venture Capital ($ M, disclosed)	$ 264.65	$ 359.40	-26%
Average Venture Capital Deal Size ($ M, disclosed)	$ 15.57	$ 12.39	26%
Venture Capital by cluster ($ M, disclosed)	Telecom, Photonics, and Wireless $43.5; Software $50.6; Life Sciences $82.9; Microelectronics and Hardware $53.5; Other $34.3		
CRITICAL TALENT			
Population by Language Groups	51.3% Anglophone; 32.8% Francophone; 15.9% Allophone		
Non-official Languages	Chinese 3%; Arabic 2.9%; Italian 1.4%; Spanish 1%; German 0.9%		
Language of Instruction at Universities and Colleges	78% English; 22% French		
Enrollment at French and English School Boards	84% English; 16% French		
Proportion of Schools within the French and English School Boards	79% English; 21% French		
Student Enrollment	Secondary Schools: 46,255; Elementary Schools: 91,462; Colleges: 16,92;8 University Undergraduates: 49,164; University Postgraduate: 12,971		
University Enrollment	University of Ottawa: 31,376; Carleton University: 23,902; Université du Québec en Outaouais: 5,035; St. Paul University: 769; Dominican University College: 284		
College Enrollment	Heritage College: 275; Algonquin College: 13,074; La Cité collégiale: 3,579		
Universities Degrees Awarded	Total: 10,809 degrees awarded. Bachelor: 9,138; Doctorate: 189; Graduate Certificate and Diploma: 335; Masters: 1,859; Undergraduate Certificate and Diploma: 596		
Largest Faculty Enrollment - Universities	Arts, Hum., Soc.Science Faculty (Includes Journalism, Social Work Faculty And Music)		
Largest Faculty Enrollment- Colleges	Administration, Hotel Management and Tourism		
Enrollment in University Science and Technology Courses	5,731	6,282	-9%
Cooperative Education Programs	Coop Students have increased by 21% over the past year Coop Employers have increased by 27% over the past year Placement rate has increased 5% over the past year		

Chapter 1 – Economic Development

As the capital of Canada and with a population of more than 1.3 million, Ottawa is the fourth largest region in the country and the central city of a much larger metropolitan area. The people who live and work in this greater area reside, go to school and travel to and from 33 municipalities spread across nine counties and regions surrounding Ottawa and Gatineau.

Ottawa is a bilingual city where the nation's founding linguistic communities (French and English) live and work together. Ottawa residents enjoy an unrivalled quality of life in a safe environment. Few major cities rival Ottawa's openness, safety, network of nature parks and low cost of living. Benefiting from a unique combination of urban convenience and accessible nature, Ottawa combines small-city life with a cosmopolitan vibe. Ottawa is full of cultural, ethnic and recreational diversity, comprising many national institutions and historic buildings.

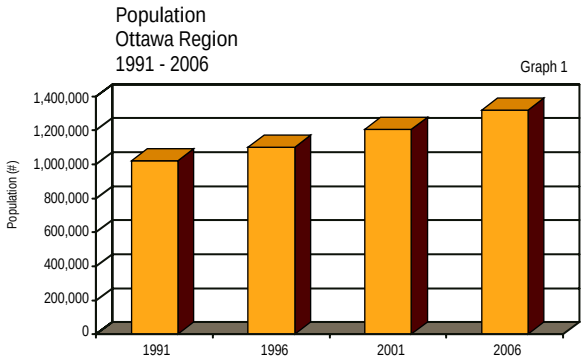
There are three types of businesses established in Ottawa: export companies that serve international markets all around the world; regional companies that serve Ottawa residents and businesses; and the rural and agricultural economy serving the region.

In terms of economic development, Ottawa is one of North America's fastest growing economies and one of the world's most progressive centers of innovation. Ottawa has an innovation driven and cluster-based economy and boasts the highest level of R&D spending per capita in the country.

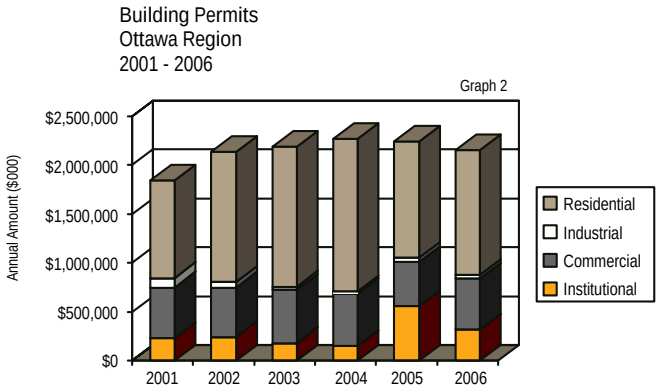
Ottawa is a global technology centre with more than 1,800 companies participating in growing sectors comprising the knowledge-based industry: clean technologies, telecommunications, software, contact/customer centre, defence and security, wireless, life sciences, semiconductor, environment, e-business, photonics and technology services that support these industries. Together, these industries employ approximately 79,466 people. The region's economy is also complemented by thriving manufacturing, film and television, tourism and multimedia industries and the presence of more than 120,000 federal government employees.

In 2006, Ottawa once again ranked on the Intelligent Community Forum's annual list of the world's Smart 21 Intelligent Communities. The distinction recognizes Ottawa's commitment to fostering broadband communication and information technology towards economic development, social cohesion and global growth. Recently, Ottawa was announced as having progressed further through this international competition, having been announced as one of the world's Top Seven Most Intelligent Communities.

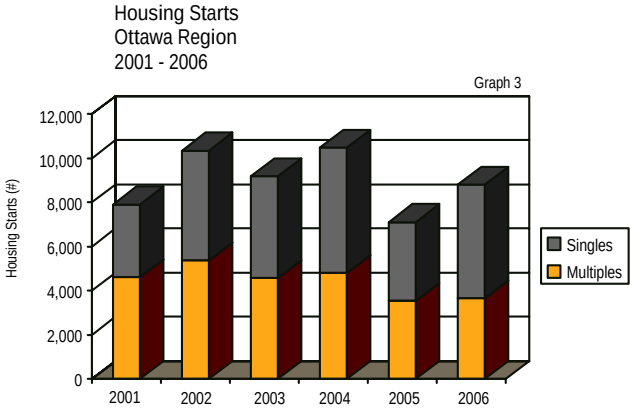
Key Indicators: Population



- City of Ottawa projection data reveals that the population within the region makes Ottawa the fourth largest metropolitan region in Canada. The population has increased by 1.7 per cent since 2005, adding 21,884 people to reach a total of 1,308,300.



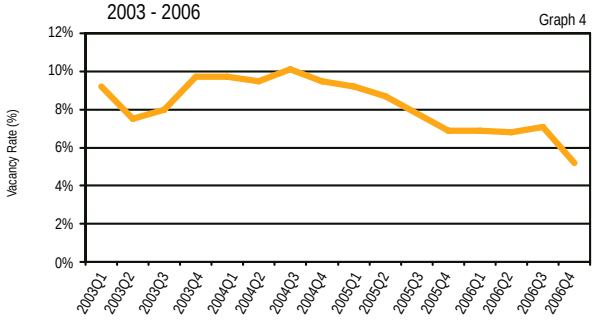
- According to preliminary estimates, over $2.15 billion worth of residential, industrial, commercial, institutional and governmental building permits were issued in 2006, a decrease of 4 per cent over the 2005 amount of $2.24 billion.



- Ottawa's housing starts increased by 24 per cent for the second year in a row. Housing starts for single dwellings increased by 3.1 per cent to 3,651, and increased by 44.7 per cent for multiple dwellings to 5,157.

Historical Vacancy Rate, Office Market
Ottawa Region
2003 - 2006

Graph 4



- Ottawa's office real estate market (all markets) demonstrated considerable demand during 2006, ending the fourth quarter with the lowest vacancy rate seen in recent years of 5.20 per cent.

Key Indicators: Economic

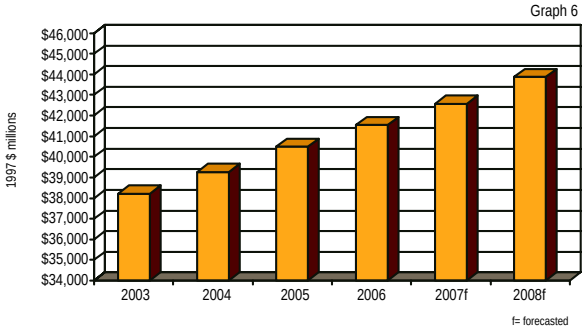
Annual Average Percentage Change for Consumer Price Index, All Items
Ottawa Region
2004 - 2006

Graph 5

- The consumer price index increased by 1.9 per cent in 2006, and according to the Conference Board of Canada is forecast to continue to rise by 1.4 per cent in 2007.

Gross Domestic Product
Ottawa Region
2003 - 2008

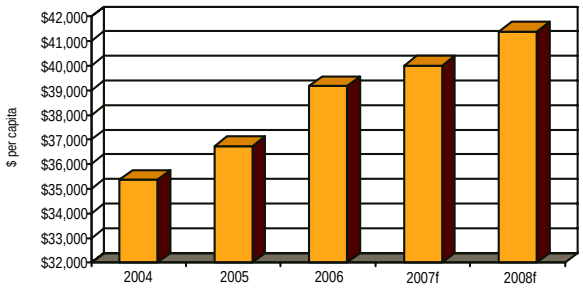
Graph 6



- Economic growth in the Ottawa Region fared far better than other census metropolitan economies in Ontario in 2006, with the GDP having increased by 2.6 per cent to $41.5 billion.

Personal Income
Ottawa Region
2004-2008

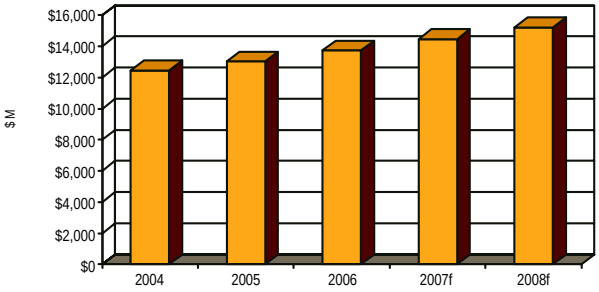
Graph 7



- Personal income per capita also increased by 6.6 per cent to $39,168 - a stark increase over the previous annual growth rate of 3.9 per cent.

Retail Sales
Ottawa Region
2001 - 2006

Graph 8



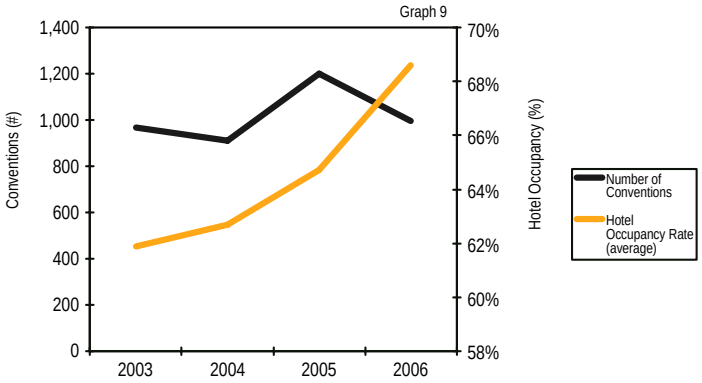
- Ottawa continues to be one of Canada's largest consumer markets. The Conference Board of Canada reports that retail sales in this region topped $13.7 billion, a 5.4 per cent increase in 2006.

- Reinforcing the Ottawa Region's claim as the most highly educated population, the region's residents spent the most ($422) out of Canada's six largest CMA's on reading materials and printed matter in 2006, according to Statistics Canada.

Key Indicators: Tourism

Ottawa's seasonal beauty, exceptional culture and tourism infrastructure, diversity of meeting facilities and proximity to the federal government ensures the region's standing as one of Canada's top destinations for travel and business.

Tourism Indicators
Ottawa Region
2003 - 2006



- There were 102 fewer conventions in Ottawa in 2006 compared to 2005 (decreased 17 per cent). The number of conventions is projected to remain fairly steady over the next four years.
- The hotel occupancy rate in Ottawa was up 3.9 percentage points to 68.6 per cent.

Key Indicators: Airport Traffic

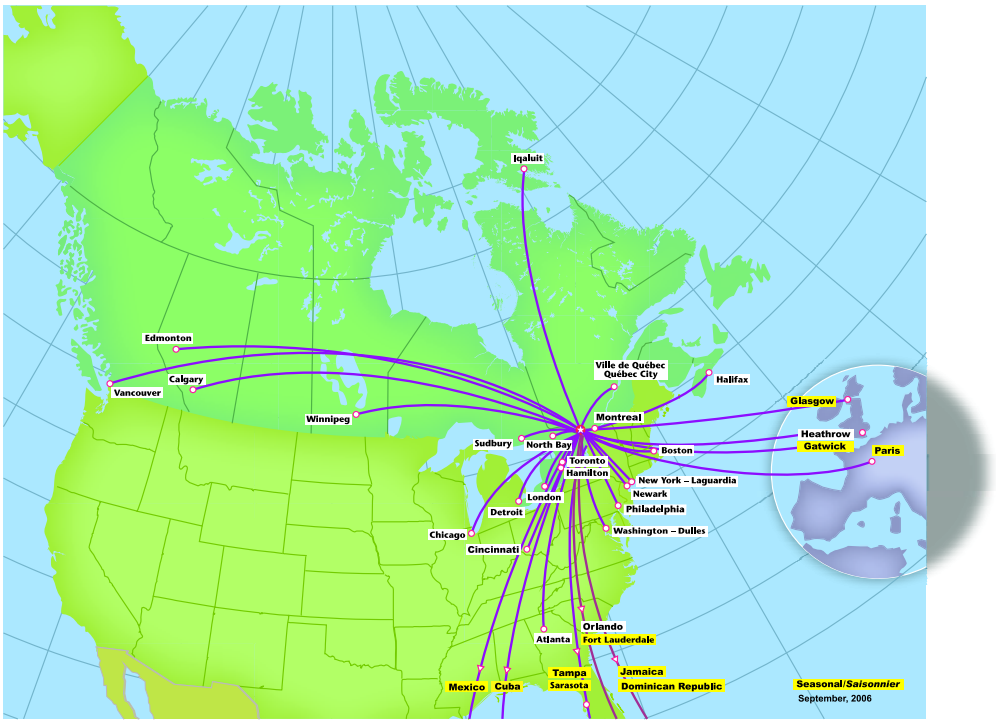
Ottawa hosts the 6th busiest airport in Canada by passenger traffic and the 9th busiest by aircraft movements. Ottawa Macdonald-Cartier International Airport is part of Canada's busiest air commuter route between Montreal, Ottawa and Toronto, and is also the hub for flights to the Eastern Arctic. Record setting growth in passenger numbers has resulted in the Airport Authority's decision to go forward with Phase II of the Airport Expansion Program, which is scheduled for completion in 2008. Phase II represents an investment of $100 million in addition to the $310 million which was spent on Phase I.

- In 2006, 3.8 million passengers passed through the Ottawa airport. This was an increase of 1.9 per cent over the 2005 passenger traffic volume of 3.7 million:
  - ► international passenger traffic was up 12 per cent to 264,626;
  - ► transborder passenger traffic (between Ottawa and the U.S.) was up 2.3 per cent to 735,753; and
  - ► domestic passenger traffic from Ottawa was up 1 per cent to 2.8 million.
- Over 25 commercial and four cargo airlines fly to Ottawa Macdonald-Cartier International Airport.

In 2005, the Ottawa International Airport was awarded second place in three categories in the AETRA[i] customer satisfaction benchmarking program:

- 2nd in customer satisfaction for all enrolled airports between 0-5 million passengers;
- 2nd in customer satisfaction for all enrolled airports in the Americas (out of 16 airports); and
- 2nd in customer satisfaction for all enrolled domestic passenger airports (out of 34 airports).

Ottawa International Airport Non-stop Destination Route Map



Source: Ottawa International Airport Authority

Key Indicators: Environment

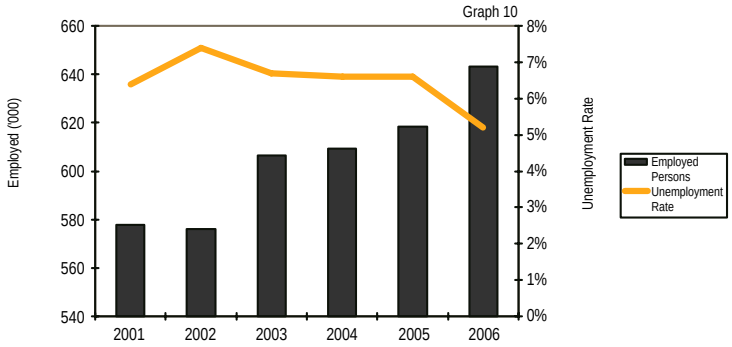
Ottawa treats, maintains and distributes high quality drinking water which meets or exceeds all health-based criteria. This ensures a reliable, plentiful and safe supply of water within the region. The City also continues to uphold its mandate to deliver solid waste management services to the residential sector of the City of Ottawa. The region's Integrated Waste Management Master Plan is a clearly defined strategy to best meet the financial, environmental and sustainability needs over the next 20 years.[ii]

- In 2005, the City treated a total of 125 billion litres of water, equivalent to 15,860 million litres of water per 100,000 persons, or 438 litres per person for residential use. Consumption has decreased progressively since 2001 when it was at 510 litres.
- In 2005, the City collected 310,879 tonnes of solid waste from residential households an average of 890 kilograms per household. Of this, 32.3 per cent was diverted, largely through recycling and composting of leaf and yard waste. The City maintains a target to achieve 40 per cent waste diversion by 2007.

Key Indicators: Labour Market

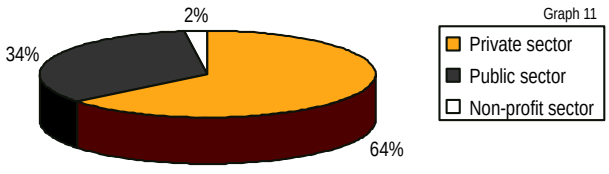
Traditionally, Ottawa's economy had been heavily dependent on the public sector for employment opportunities, but subsequent to the strong growth of technology in the mid-1990s, private sectors such as those based on information and communications or biotechnologies have become vital for the growth and stability of local businesses and organizations. Today, Ottawa's public and private labour force are intrinsically connected with movement between each as labour demand changes. It is a telling sign of the region's resilience and diversifying economy, that despite the relatively large number of jobs that were lost in the technology sector in recent years, the unemployment level in the Ottawa Region has reached the lowest point in the last two decades.

Labour Force Indicators
Ottawa Region
2001 - 2006



- The Ottawa Region's unemployment rate decreased to 5.2 per cent in 2006, a decrease from the 6.6 per cent unemployment rate in 2005. The last time unemployment was this low was in 1988.
- The number of persons employed in the Ottawa Region increased by 4 per cent to 643,300 in 2006.
- Such local growth in employment coincides with the fourteenth consecutive year of employment increases in Canada[iii] and is second only to Calgary in terms of overall employment growth.[iv]

Employment by Sector Type
Ottawa Region
2006



- In 2006, employment within the private sector increased by 8 per cent (increased by 28,900); decreased by 1 per cent within the public sector (decreased by 2,400) and decreased by 11 per cent in the non-profit sector (decreased by 1,700).

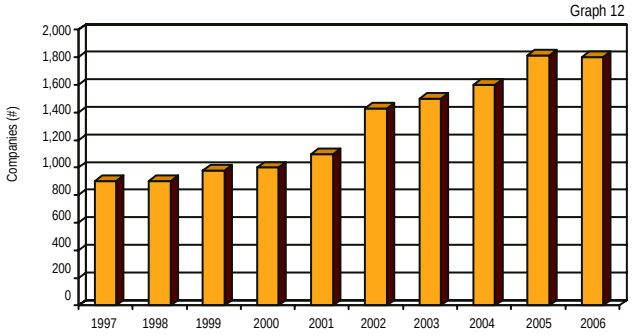
Key Indicators: Knowledge-Based Industries

The arrival of the knowledge-based economy has brought about significant opportunities for Ottawa businesses and citizens. Overall, these statistics and trends suggest that the local workforce is occupationally mobile and flexible; this is perhaps a result of relatively high levels of education and income among workers.

Results from OCRI's annual Technology Industry Survey illustrate an increased number of employees within Ottawa's knowledge-based industries - defined as those which are intensive in their inputs of technology and human capital. Locally, this has been classified as those that primarily operate within the sectors tracked by OCRI: telecommunications, software, contact/customer centre, defence and security, wireless, life sciences, semiconductor, environment, e-business, photonics and technology services that support these industries.

Companies in Knowledge-Based Industries
Ottawa Region
1997 - 2006

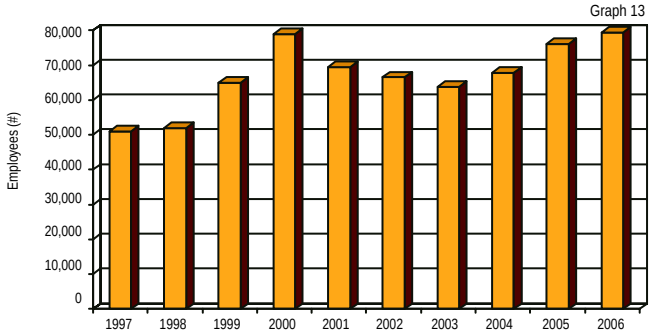
Graph 12



- The number of knowledge-based companies in Ottawa decreased by 0.4 per cent (decreased by 8) in 2006 to 1,803.

Employees in Knowledge-Based Companies
Ottawa Region
1997 - 2006

Graph 13

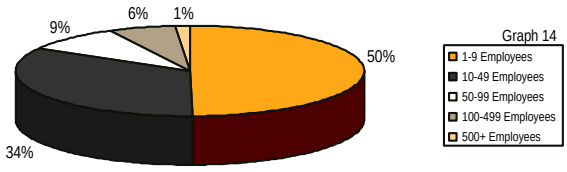


- The number of employees working within knowledge-based companies in Ottawa increased by 4.4 per cent (increased by 3,340) in 2006 to 79,466.

"Intense global competition will drive corporations to keep investing in the high-tech goods and services produced in the Ottawa Region."
- Metropolitan Outlook 1 (Winter 2007): Economic Insights into 27 Canadian Metropolitan Economies, Conference Board of Canada

Self-employment has become a more prevalent form of employment now than it was just over ten years ago. This growth in self-employment and the number of startups has led analysts to suggest that the region is home to a highly 'entrepreneurial' culture.

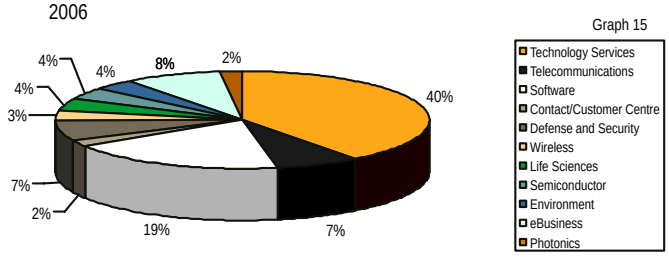
Companies in Knowledge-Based Industries by Size
Ottawa Region
2006



- 50 per cent of companies in knowledge-based industries have 1-9 employees, while 34 per cent have 10-49 employees.

Ottawa features an innovation driven and cluster-based economy. These clusters are forecast to be the engines that will drive economic growth over the next decade and beyond. The economic clusters with formal organizations in the Ottawa Region include photonics, e-business, wireless, software, security, contact centres, life sciences and tourism.

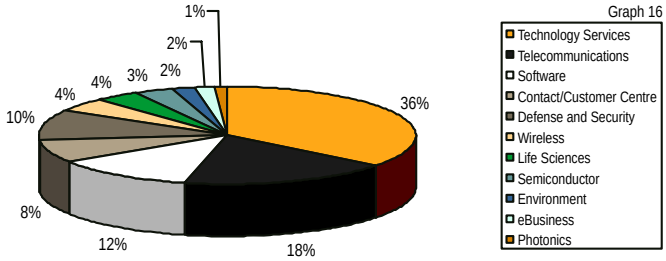
Companies in Knowledge-Based Industries by Cluster
Ottawa Region
2006



- The technology services cluster, which includes management information services, system integrators, consultants and administrative services, has the largest proportion of companies that have self designated themselves as operating 'primarily within' (40 per cent). The software cluster is the second largest cluster with 19 per cent of companies.

Employment within the knowledge-based clusters continues to diversify as new technologies are being developed, alongside the number of companies being created to service them.

Employees in Knowledge-Based Companies by Cluster
Ottawa Region
2006



- In 2006, the technology services cluster employed 36 per cent of all knowledge-based employees, making this cluster the largest employer. This cluster is followed by the telecommunications cluster which employs 18 per cent, and the software cluster which employs 12 per cent.

Top 10 Knowledge-Based Employers
Ottawa Region

Table 1

Rank	Company Name	Local Employees
1	Nortel	5,000
2	Bell Canada	3,000
3	Calian Technologies Ltd.	2,200
4	CGI	2,000
5	Alcatel Canada	1,900
6	SITEL Corporation	1,760
7	Cognos Inc.	1,415
8	General Dynamics Canada	1,400
9	IBM Canada Ltd.	1,200
10	Dell Canada Inc.	1,200

Top 10 Knowledge-Based Employee Gainers
Companies that gained more than 100 employees between Dec 05-06

Table 2

Company Name	Local Employees 2006	Employee % Growth
Dell Canada Inc.	1,200	n/a
SITEL Corporation	1,760	76%
CGI	2,000	43%
MaxSys Staffing and Consulting Inc.	600	167%
Canadian Bank Note Company, Limited	850	70%
Associates Group of Companies	435	85%
Rogers Media Inc.	200	567%
General Dynamics Canada	1,400	12%
S.i.Systems Ltd.	270	69%
Canada Job 1	111	1010%

"The remarkable growth of this customer contact centre is made possible by the depth of talent we found in the Ottawa workforce. Our continued success depends on our ability to provide exceptional support to all our customers, and the men and women of the Ottawa centre meet that challenge every day"

- Michael Dell, Chairman, Dell Inc., November 8, 2006, speaking on Dell's plans to double the size of its Ottawa Customer Contact Centre over the next few years.[v]

OCRI's Take:

Thanks in large part to the robust growth in the Ottawa Region's knowledge-based industries, the economy fared exceptionally well in 2006. Growing domestic demand, a rebounding high tech sector, a resilient Canadian dollar and the lowest unemployment rate in more than 20 years all point to a firm economic foundation for Ottawa.

Of all metropolitan economies in Ontario, the region's economy steadily outpaced other areas more sensitive to the rise of the Canadian dollar and other economic variants. In terms of sustainable economic development, Ottawa's labour market also outperforms the national average from both quantity and quality perspectives.

Strong employment levels, low unemployment rates, vigorous institutional and corporate research and development activity, and a robust merger and acquisitions market characterize the year's regional economic growth. The region's gross domestic product showed signs of healthy economic activity in 2006 with growth expected to take off in 2007.

The demographics of the region's technology companies have adapted to the dynamic nature of the technology industry. Mergers and acquisitions have meant that the actual number of companies has decreased, yet the growth of small firms has remained consistent with 2005 levels. In terms of innovation, start-ups continue to be the life-blood of the technology sector, with over 50 per cent of companies having less than nine employees.

In Ottawa, the most recognized clusters are technology services, telecommunications, software and tourism. There are however a number of growing clusters, such as life sciences, defence and security, and clean technologies that provide significant economic development opportunities for the future.

The technology support service infrastructure in Ottawa remains instrumental to attracting significant economic development investments. Ottawa has the administrative and operational support infrastructure necessary to start, operate and expand a technology operation. Ottawa's financial services sector is attuned to the demands of global technology companies and the city's investment and technology banking sectors play a critical role in adding greater value to perspective companies that are looking at Ottawa as a place to do business.

OCRI actively provides support services to encourage incoming and outgoing investment and trade opportunities, which serve to diversify and grow the Ottawa economy. In 2006, the OCRI Global Marketing division continued to focus marketing and promotion initiatives on growing economic regions within the United States, Asia and Europe. In 2007, OCRI will continue to be involved in strategically marketing the region to facilitate trade and to attract the investment, workers, and companies critical to Ottawa's sustained success.

Chapter 2 – Innovation and Commercialization

Ottawa has become Canada's focal point for advanced technology, innovation and commercialization. With the highest level of R&D spending per capita in the country, and home of leading economic clusters, Ottawa has a well developed science and research community comprised of corporate, academic and health care institutions.

Ottawa has the second largest concentration of scientists and engineers in North America[vi] and is home to some of Canada's most notable research and development organizations, including the National Research Council and the Communications Research Centre. Three of Canada's top six corporate R&D spenders also have research and development facilities in Ottawa; these firms include Nortel Networks, Bell Canada, and IBM Canada. These organizations provide the critical support services to assist the process of commercializing viable technologies.

Innovation, and the continued development of such, is vital to Ottawa's ongoing prosperity within a knowledge-based economy. Ottawa's visionary corporate sector, highly educated workforce and unique blend of research institutions make it the ideal place to foster new ideas and initiatives.

Through sustained levels of corporate and sponsored research, the city has fostered a strong link between its universities and business investment. The connection is motivated primarily by the need to compete globally and the growing importance of science-based and technology-intensive industries. Ottawa is a leading centre of innovation, with more than $4 billion invested by Ottawa-based companies in research and development activities annually along with more than $1.5 billion[vii] annually in public sector research. The combination of public sector research and private sector commercialization makes Ottawa an ideal place to focus the commercialization activities of Ontario.

The Ottawa Region is also ranked as the number one community in Canada in terms of corporate R&D spending per capita.

In 2006 the Ontario Government – recognizing the need for innovation investment – invested $1.8 million through the Ontario Research Commercialization Program, into OCRI and the Ottawa Life Science Council managed initiatives, aimed at accelerating the movement of world-class research from labs to the marketplace.

Innovation and R&D were particularly evident within the life sciences cluster in 2006. The sector secured a substantial share of venture investment and experienced increases in employment and companies that participate within the sector. Five out of 10 of the 2006 Canada's Top 10 Life Science Companies were based in Ottawa, generating significant opportunity for investment and commercialization activity. Local universities and university-affiliated hospital research centre further contribute to the strength of the cluster.

"Ottawa has emerged as a leader in North America and the world and continues to shine as the nation's model of technology development and innovation. The city has successfully expanded from a government economy to include a thriving knowledge-based technology economy. It is imperative to preserve and enhance Ottawa's status as a vital technology community and guarantee that the City remains on the global map."
- Larry O'Brien, Mayor of the City of Ottawa

Ottawa was one of the first regions in Canada to capitalize on the vast potential of biotech as a new focus for economic activity. With more than 40 research centres and institutions, and company research strengths spanning stem cell research, genomics, proteomics, bioprocessing, and others, Ottawa is home to companies recognized as industry leaders in the fields of neuroscience, cancer, immunotherapeutics, radiotherapeutics, medical and assistive technologies, regenerative medicine and clean technology.

To accommodate this burgeoning sector, the Province of Ontario, the City of Ottawa and local healthcare institutions established the 9-hectare Ottawa Life Sciences Technology Park. The research park and adjoining Ottawa Health Sciences Centre represent one of the largest concentrations of health-related operations in Canada. There are 20 life sciences-related research institutes in the Ottawa region, investing an estimated $350 million annually in research and development. One such institute is the Ottawa Health Research Institute, the research arm of the Ottawa Hospital.

Securing investment is the first step in the process of innovation and commercialization. Challenges to attracting this funding however were present in 2006. The relative young age of the venture capital industry in Canada; the lack of returns to support new fund creation; and, changes in government regulations have resulted in a decreasing number of start-up companies successful at finding sources of growth-enabling risk capital.

Ottawa venture capitalists (VC) also displayed a trend in focusing investment on grooming their maturing portfolio companies for profitable exit opportunities. This was evident in the average size of the 17 deals for 2006 having increased to nearly double the average level of 2004 financings.

Variation Biotechnologies – selected by the Ottawa Life Science Council as one of Canada's Top 10 Life Science Companies in 2004, 2005 and 2006 – held the distinction of closing the Ottawa-area's largest life science VC deal in 2006, securing $41.6 million (led by US-based Clarus Ventures) in Series A financing to fund an innovative vaccine platform.

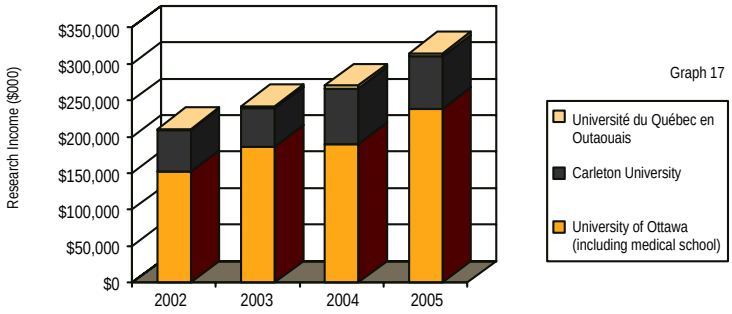
Interestingly, 100 per cent of the institutional investment into the Variation deal was from foreign investors. This is a clear indication that investors continue to value Ottawa's expertise in established companies specifically in the technology and life science areas. This trend towards foreign investment attraction is increasing as the supply of available capital continues to dwindle locally. Such foreign investment, however, highlights the need for more Canadian-based venture capital funds. This emphasizes the necessity for strategic action to look for new sources of risk capital to support the creation and growth of companies without forcing them to look outside of Canada for investment.

"Ottawa in particular has a host of world-leading companies in health biotechnology and the new bioproducts field such as Iogen's bio-diesel and industrial enzyme work."

- BIOTECanada's President and CEO, Peter Brenders[viii]

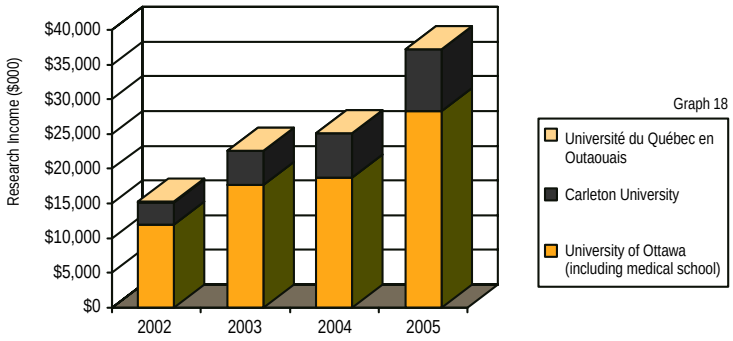
Key Indicators: Research and Development

Sponsored Research Income
Ottawa Region Universities
2002 - 2005



- In fiscal 2005, the total sponsored research income at the University of Ottawa, Carleton University and the Université du Québec en Outaouais reached $314 million - an increase of 16 per cent from the 2004 figure of $270 million.

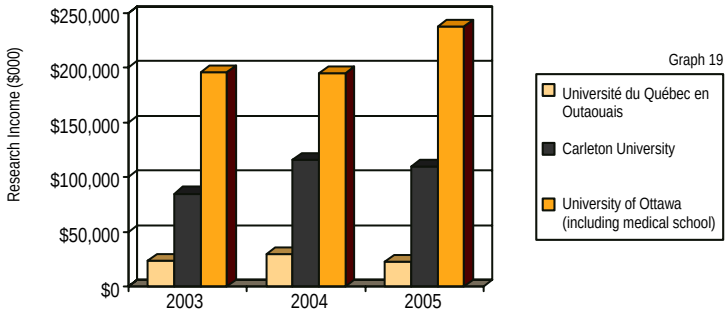
Corporate Research Income
Ottawa Region Universities
2002 - 2005



- The corporate sponsored research income at these universities has continued its year-over-year increase. In 2003-04 there was an increase of 11 per cent, with a further significant increase of 48 per cent in 2004-05 to reach a total of $37.1 million in corporate sponsored research income.

Research intensity at Ottawa's universities (sponsored research income per full-time faculty position) is the single best indicator of the health of the research funding system. Overall, Ottawa region universities experienced a nine per cent increase in research intensity compared to 2005.

Research Intensity
Ottawa Region Universities
2003 - 2005



- The University of Ottawa continues to receive the majority of research income in Ottawa due to its health research enterprise. In 2005 it had a research intensity of $237,894 per full-time faculty member. This represents a 22 per cent increase over 2004-05

- Both Carleton University and Université du Québec en Outaouais had a slight decrease in research intensity in 2004-05. Carleton University decreased slightly by6 per cent, Université du Québec en Outaouais dipped by 25 per cent.

Overall Ranking, Top Research Intensive Universities
Ottawa Region
2002 - 2005

Table 3

University	2002 Ranking	2003 Ranking	2004 Ranking	2005 Ranking
University of Ottawa (including medical school)	9	8	10	8
Carleton University	17	20	18	18
Université du Québec en Outaouais	54	48	49	52

According to the latest RE$EARCH Infosource figures, the University of Ottawa (including medical school) was ranked 8th in Canada's Top 10 Research Intensive Universities, in total research funding. This was an improvement on its 10th place ranking the year prior. Carleton University was ranked 18th for the second year and Université du Québec en Outaouais slipped in its ranking to 52nd in Canada.

Top 100 Ottawa-Based Corporate R&D Spenders

Table 4

National Rank 2005	National Rank 2004	Company (*=converted from US$, fs = foreign subsidiary, nd= not disclosed)	R&D Expenditures FY2005 CDN ($000)	R&D Expenditures FY2004 CDN ($000)	Industry Sector
1	1	Nortel Networks Corporation*	$2,248,730	$2,549,639	Comm/telecom equipment
11	10	Alcatel Canada Inc. (fs)+	$194,000	$190,000	Comm/telecom equipment
15	18	Cognos Incorporated*	$128,354	$118,692	Software and computer services
32	22	Zarlink Semiconductor Inc.*	$78,996	$97,743	Comm/telecom equipment
46	47	Mitel Networks Corporation*	$50,160	$47,114	Comm/telecom equipment
70		Corel Corporation*	$28,519	$18,937	Software and computer services
71	78	Tundra Semiconductor Corporation	$28,416	$24,237	Electronic parts and components
127	140	bitHeads, inc.	$10,200	$8,000	Software and computer services
152	161	MOSAID Technologies Incorporated	$7,867	$6,218	Comm/telecom equipment
197	201	March Networks Corporation	$4,506	$3,981	Comm/telecom equipment
219	409	Allen-Vanguard Corporation	$3,908	$780	Chemicals and materials
291		Workstream Inc.	$2,147	$453	Software and computer services
298	306	Nuvo Network Management Inc.	$2,005	$1,743	Software and computer services
312		Advanced Software Concepts Inc.	$1,800	$1,500	Software and computer services
318	304	International Datacasting Corporation	$1,712	$1,775	Comm/telecom equipment
338		Biokinetics and Associates Ltd.	$1,500	$1,500	Engineering services
340	443	PharmaGap Inc.	$1,489	$572	Pharmaceuticals/biotechnology
348	366	Cistel Technology Inc.	$1,400	$1,066	Software and computer services
371	448	Liponex Inc.	$1,109	$539	Pharmaceuticals/biotechnology
385	369	Impatica Inc.	$1,018	$1,052	Software and computer services
388	373	TASKE Technology Inc.	$1,000	$1,025	Software and computer services
388		iotum Corporation	$1,000	$500	Software and computer services
411	416	ZIM Corporation*	$858	$741	Software and computer services
479	491	C-COM Satellite Systems Inc.	$554	$373	Comm/telecom equipment
575	588	ACE/Security Laminates Corporation	$201	$117	Chemicals and materials
602	507	Sentex Systems Ltd.	$141	$314	Chemicals and materials
606	636	Clearford Industries Inc.	$133	$21	Environment
636	614	Teknision Inc.	$70	$70	Software and computer services
641		Chemaphor Inc.	$64	nc	Pharmaceuticals/biotechnology
650		Elytra Enterprises Inc.	$50	$50	Software and computer services
657	632	In-Touch Survey Systems Ltd.	$32	$29	Software and computer services
677	650	Thermal Energy International Inc.	$3	$4	Energy/oil and gas

- Overall, corporate R&D spending in fiscal 2005 amongst RE$EARCH Infosource's Top 100 Corporate R&D Leaders increased by 5 per cent, however amongst the 32 Ottawa-based companies within this list total spending dipped by 9 per cent to $2.8 billion.

- Nortel Neworks, Alcatel Canada and Cognos Incorporated once again qualified for membership in RE$EARCH Infosource's R&D $100 Million Club.

Top 100 Ottawa-Based Corporate R&D Spenders
by Sector

Table 5

		R&D Expenditure FY 2005 (CDN ($000)
1	Software and computer services	$178,453
2	Pharmaceuticals/biotechnology	$2,662
3	Environment	$133
4	Engineering services	$1,500
5	Energy/oil and gas	$3
6	Electronic parts and components	$28,416
7	Comm/telecom equipment	$2,586,525
8	Chemicals and materials	$4,250
		$2,801,942

- Amongst the Ottawa based companies in the Top 100 Corporate R&D Spenders List, 92.3 per cent of expenditure was within the communications / telecom sector. Nortel dominated the R&D spending figure for Ottawa and Canada,having spent $2.2 billion in 2005.

In 2006 the Ottawa Region was selected as one of Canada's Top 3 Research Communities by RE$EARCH Infosource, ranking highly on corporate R&D indicators, and proportion of labour force in natural and applied sciences and related occupations.[ix]

- Corporate R&D spending per capita: Ottawa Region ranked number one in Canada, spending $2,030 on R&D per capita. This is more than double the spending of Montreal, which was ranked second in Canada with $894 R&D spending per capita. Toronto came in ranked third, with $633 R&D spending per capita. Based on 2002 data.

- Percent of Labour Force in Natural and Applied Sciences: Ottawa Region ranked number one in Canada, with 12.9 per cent, followed by Calgary (10.4 per cent), Quebec City (8.6 per cent) and Toronto (8.2 per cent).

Key Indicators: Investment Climate

Over the past decade, more than $4.4 billion in venture capital has been invested into local Ottawa companies. However, the challenge for Ottawa's technology sector, and a recurring theme through 2006, is the lack of funding for early-stage start-ups.

- After recording a total VC investment in 2005 of $359.40 million (spread over 29 separate deals), in 2006 the disclosed number stands at $264.65 million with a total of 17 deals.

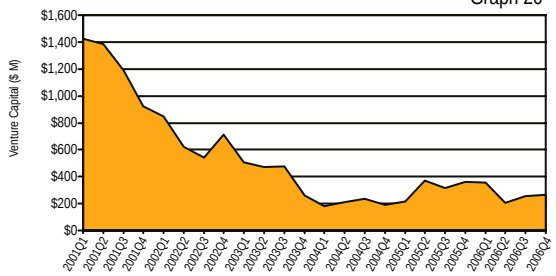
2006 Ottawa-Gatineau Region Disclosed Venture Capital Deals

Table 6

1st Quarter - 2006		
Company Name	Funding Received	Sector
StemPath Inc.	$1.00	Life Sciences
Galazar Networks	$7.55	Photonics
Airwide Solutions	$28.65	Software
Total	$37.20	
2nd Quarter - 2006		
Company Name	Funding Received	Sector
Zelos Therapeutics Inc.	$10.00	Life Sciences
Spotwave Wireless Inc.	$2.80	Wireless
NeuroLanguage	$2.75	Software
Iogen Corporation	$30.00	Life Sciences
FirstHand Technologies	$7.80	Software
SolaCom Technologies	$4.00	Other
Total	$57.30	
3rd Quarter - 2006		
Company Name	Funding Received	Sector
BelAir Networks	$24.00	Wireless
SiGe Semiconductor	$21.85	Microelectronics
MODASolutions	$12.30	Other
Group IV Semiconductor	$9.10	Photonics
Plasco Energy Group, Inc	$18.00	Other
Total	$85.25	
4th Quarter - 2006		
Company Name	Funding Received	Sector
Natural Convergence	$11.40	Software
Liquid Computing	$31.60	Microelectronics
Variation Biotechnologies Inc.	$41.90	Life Sciences
Total	$84.90	
Year to date	$264.65	

Venture Capital Investment
Trailing 12-month Total
Ottawa Region
2001-2006

Graph 20

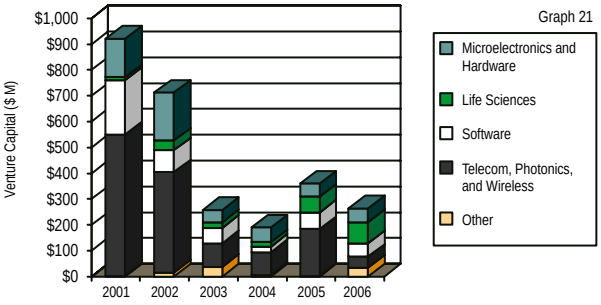


Venture Capital Investment
Ottawa Region
2006

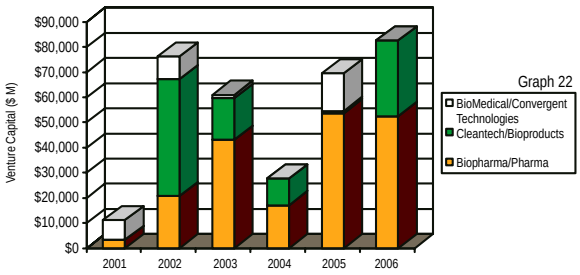
Table 7

	VC Invested ($ M)
Telecom, Photonics, and Wireless	$ 43.45
Software	$ 50.55
Life Sciences	$ 82.90
Microelectronics and Hardware	$ 53.45
Other	$ 34.30
TOTAL	$ 264.65

Venture Capital Investment by Cluster
Ottawa Region
2001 - 2006

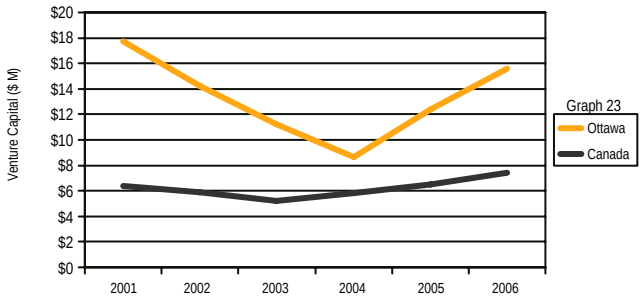


Venture Capital Investment
Life Sciences and Cleantech Sector
Ottawa Region
2001 - 2006



- From a sector perspective, 2006 ended with a significant increase in investments made into the life science cluster:
  - ► telecom, photonics, and wireless, $43.45 million (decreased 76 per cent);
  - ► software, $50.55 million (decreased 23 per cent);
  - ► life sciences, $82.90 million (increased 35 per cent);
  - ► microelectronics and hardware, $53.45 million (increased 9 per cent); and
  - ► other sectors, $34.30 million.

Average Venture Capital Deal Size
Ottawa Region and Canada
2001 - 2006



- For the third consecutive year, the size of the average VC deal in Ottawa increased to $15.57 million – close to double the average level of 2004 financings ($8.4 million). This is quite a significant amount greater than the average size of Canadian deal for 2006 - $7.40 million.[x]

"Ottawa entrepreneurs and researchers are well poised to play a leadership role in helping Ontario to play and win in the innovation race."

- Dalton McGuinty, Premier of Ontario and Minister of Research and Innovation, announcing $46 Million Market Readiness Program at Algonquin College in Ottawa, July 2006

OCRI's Take:

Ottawa is currently making a transition from a technology city to an international hub for innovation. To become a world leader in innovation, Ottawa needs to develop its capacity to create new ideas and bring them to market. OCRI is working to meet this challenge in a number of ways. One of OCRI's key strengths is its ability to build strategic research alliances that foster investment in R&D.

In order to successfully complete this shift, the region has plans to increase the level of communication and collaboration between the research and innovation sector. The key to a thriving Ottawa economy will be based on a comprehensive strategy. This includes world-class research, skillful management, increased capital investment and an entrepreneurial community to raise the profile of Ottawa to the global state of discovery, development and commercialization.

With support from the Province and the Ministry of Research and Innovation, 2006 saw the launch of the Ottawa Innovation Hub project which aims to promote Ottawa's innovation potential. OCRI will be actively involved in this initiative, and will engage insight from a broad cross-section of leaders in all sectorsindustry, academia, business and governmentwithin the Ottawa Region and beyond. To achieve this, new initiatives must be developed in 2007. Two or three potential public-private concepts will be identified and plans will be made for their implementation.

OCRI promotes investment in research and development to advance the commercialization of technology. In June of 2006, OCRI announced its intention to merge with the Ottawa Life Sciences Council (OLSC). The strategic merger brings together the two industries, expanding their outreach and improving effectiveness by consolidating a comprehensive range of information, resources and services for all sectors, within one organization.

The Regional Innovation Development Program , a collaborative initiative between OCRI, OLSC and provincial partners, was initiated in 2006 to: improve receptor capacity; to help build SMEs and start-ups; to accelerate technology and knowledge transfer; and to create more viable and successful businesses.

Four distinct projects initiated in 2006 under this program include:

- Market/Competitive Intelligence Project: Focused on the life science and Cleantech industries, this project provides OCRI members access to an electronic library for business and market intelligence.

"Ottawa is currently in the process of developing an efficient innovation strategy that links industry clusters and academic research in order to boost the level of commercialization of research and technology while supporting the growth and development of our knowledge-based companies."
Adam Chowaniec, Chair of the Ontario Research and Innovation Council

- Business Opportunity Networks: The objective of the networks is to provide the SME community with a small team of competent opportunity seekers (Business Development Officers) with technical, business, and community understanding.

- Entrepreneur Development: This program is directly aimed at filling the skills gap experienced by the entrepreneur and opening them up to networks that expand their interaction with researchers and business opportunities including professional development courses and workshops.

- Convergence Exploration: A strategic focus on opportunities that link together sectors such as ICT and life sciences so as to accelerate the development of many other sectors as they also continue to grow.

OCRI believes that more must be done to increase the supply of capital, particularly at the early stages as venture capitalists continue to display a preference away from early stage toward later stage companies. At the same time, angel investors have notably reduced investment activity in start-up companies.

The Entrepreneurship Centre, an OCRI initiative, is dedicated to helping Ottawa entrepreneurs make educated decisions about starting and growing their businesses. The Centre aims to promote Ottawa's economy, through the development of products and services that encourage entrepreneurship and support business growth.

Challenges with finding new sources of risk capital directly correlate with the reduced client participation recorded at the OCRI Entrepreneurship Centre. It saw 2,772 clients in 2005 – 66 per cent of which remained in business a year later. The net results of these businesses included 2,793 new jobs, sales estimated at $103 million, and approximately $60 million of investment into their businesses.

In addition to being instrumental in the creation of new entrepreneurs, the Entrepreneurship Centre manages the Ottawa Capital Network[xi], a network that tracks venture capital activity in Ottawa and creates linkages within the investment community and provides knowledge and support to the business community.

The OCN also organizes the annual Ottawa Venture and Technology Summit (OVTS), one of North America's premier venture capital forums that has a history of showcasing Ottawa's top investment opportunities to Canadian and foreign investors. The 2006 OVTS hosted 243 attendees from North America and profiled 43 Ottawa-based companies looking to secure investment. To date, 52 per cent of Ottawa's disclosed venture capital deals in 2006 have gone to OVTS alumni.

What is encouraging is the fact that significant investment leads came to fruition for Ottawa in 2006.

These included: Dell's opening of a customer contact centre; Abbott Point of Care's expansion into Nortel's Corkstown campus; and the purchase of local Ottawa-based semiconductor firm Quake Technologies by US-based AMCC. While VCs appear to be investing at a cautious rate, they are maintaining their support of their portfolio companies. OCRI anticipates an increase in the overall deal flow in the city and remains cautiously optimistic for 2007.

"There is intense global competition between cities vying to be known as a global centre of innovation. With the Ottawa Innovation Hub Action plan, the Ottawa Region is well positioned to enhance its reputation as one of these leading centers."

- Chris Henderson, Co-Chair of The Ottawa Partnership (TOP)

Chapter 3 – Critical Talent

The Ottawa Region is the ideal location in which to pursue academic studies and professional development. The region's seven colleges and universities, as well as numerous technology institutes and professional schools, create a highly integrated and flexible education and training delivery system. At all levels of education, from kindergarten to doctoral programs, students have the opportunity to study in English or in French. This linguistic diversity is the defining strength of our educational system and adds considerably to Ottawa's economic advantage.

What differentiates Ottawa as a prosperous innovation hub are its highly educated, bilingual and technologically savvy residents. It is home to the second highest concentration of science and engineering employment out of 316 North American cities, surpassed only by Silicon Valley. One in nine employees is a scientist or engineer.[xii]

However, in order to compete within the global knowledge-based economy, Ottawa must be in a position to ensure that it can produce, attract, and retain a critical mass of highly qualified citizens. This is defined as critical talent. Not only is this critical talent key to the growth of existing knowledge-based industries, it is a prerequisite for attracting new business to the region. Sustainable economic development will be built on people and skills.

One example of Ottawa's critical talent base making a difference to the local economy is Jim Skippen, a Ottawa-based highly skilled patent licensing lawyer who became CEO and President of Wi-LAN in 2006. Wi-LAN was a Calgary-based wireless company who were in need of a leader who could establish a licensing program. Skippen's abilities were so compelling to Wi-LAN that the company was moved to Ottawa, resulting in an immediate economic impact of job creation in Ottawa.

Indeed, there is an urgent need for critical talent, particularly considering that science and technology continue to be the engines of Ottawa's economic growth and development. However, akin to other global, knowledge-based, learning and innovation centres, Ottawa's talent base faces a number of challenges.

There remain a significant number of unemployed and underemployed people at the same time that certain sectors are experiencing skill shortages. In addition, new immigrants, the physically disabled and aboriginals face significant barriers in entering the workforce.

Currently, there exist several prioritized issues within Ottawa's labour market including: a shortage of critical talent, specifically in the technology, health and life science/biotech sectors, shortage of skilled tradespeople, fewer youth entering the workforce, challenges around integrating immigrants into the workforce and barriers to growth for small companies. These issues, as identified by OCRI in its annual Trends, Opportunities and Priorities Report, will form the basis of plans for future labour force initiatives.

Ottawa was the first city in Canada to create a talent planning framework and an operating strategy to address workforce issues. OCRI Talentworks, developed as part of the City of Ottawa's 20/20 Economic Strategy, was initiated to identify talent pool gaps, to develop pilot projects and to integrate the supply and demand sides of the economic development planning process at the community level.

The high drop out rate for secondary students is an issue across the province. Ontario Premier, Dalton McGuinty has launched a 'Student Success Strategy' aimed at increasing high school completion rates by 13 per cent by 2011. His multi-faceted strategy includes improving technology education programs by providing hands-on learning environments that appeal to students who may be disengaged from academic programs.

Ottawa is also facing the province-wide challenge of the 'double cohort', due to the phasing out of Grade 13 in Ontario in 2003 and an increased number of students graduating from post-secondary education. Co-op programs at both the secondary and post-secondary levels will continue to be effective mechanisms for engaging industry in critical talent development and creating seamless pathways for students from school to work.

A future priority for Ottawa will be to continually re-skill the existing workforce to meet the demand for specialized skill sets as technologies continue to change and improve, while at the same time increasing student enrollment in the science and technology programs at Ottawa's colleges and universities. Employers must focus on updating the skills of their workforce, and communicating their future skill set requirements to the labour market. Governments should also continue to focus on improving the speed at which skilled immigrants are integrated into the growing technology sector.

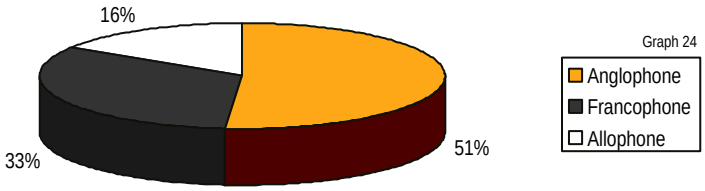
"…for today's students, this is a great time to be entering the skilled trades. Demand is high, and will grow even more as large numbers reach retirement age and make way for the next generation of skilled workers."

- Chris Bentley, Minister of Training, Colleges and Universities: Statement to the Legislative Assembly.

Key Indicators: Language Skill

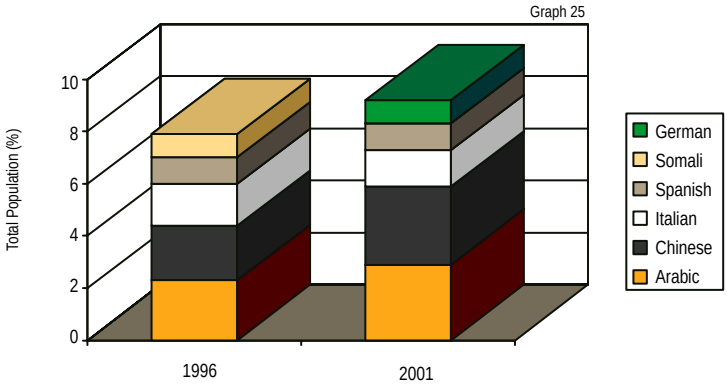
Boasting the highest number of residents with post-secondary education in Canada, a bilingual rate of 44 per cent, and more engineers, scientists and PhDs per capita than any other city in the country, the strength of Ottawa's workforce has played a pivotal role in its emergence as a global technology centre. A high proportion of English and French bilingualism, combined with strengths in multiple international languages, translate into great opportunities for businesses that are looking to establish themselves where a multilingual workforce is easily available to serve customers world wide.

Population by Language Groups
Ottawa Region



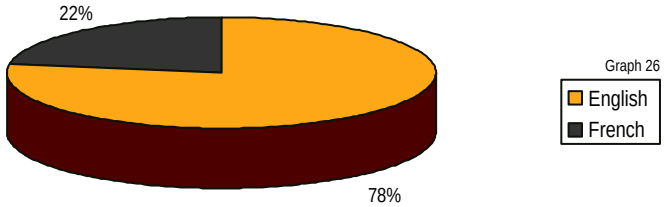
- 51 per cent of Ottawa's population has English as a mother tongue; 32.8 per cent are Francophone, and 15.9 per cent have a non-official language as a mother tongue.

Top Five Non-Official Languages
Ottawa Region*



- The top five non official languages in Ottawa are, in order, Chinese, Arabic, Italian, Spanish and German.

Language of Instruction at Universities and Colleges
Ottawa Region
2005



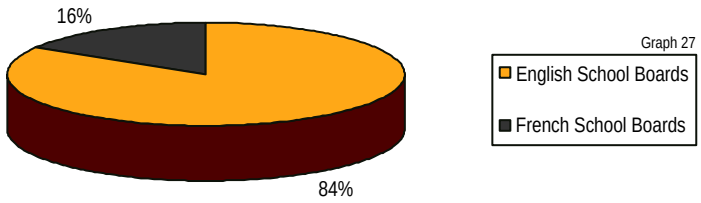
- 78 per cent of post secondary students are enrolled in English colleges and universities; 22 per cent are enrolled in French.

Key Indicators: Primary and Secondary Education

There are close to 300 elementary and secondary schools throughout the Ottawa region that offer educational programs in the public, private, Catholic and non-denominational school systems. Four major school boards offer programs from kindergarten to Grade 12, special education programs, and continuing education programs, among others.

Furthermore, Ottawa's primary and secondary education systems offer a variety of options for language instruction including core programs in English and French, English as a second language (ESL) and French as a second language (FSL) programs, French immersion programs and several other programs specifically developed to address student needs.

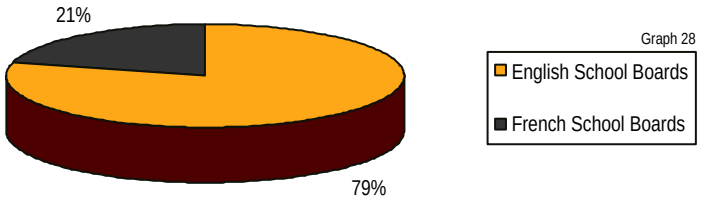
Enrollment at French and English School Boards
Ottawa Region
2005



Graph 27

- 84 per cent of all students are enrolled within the two English school boards, 16 per cent within the two French school boards.

Proportion of Schools Within School Boards
Ottawa Region
2006



Graph 28

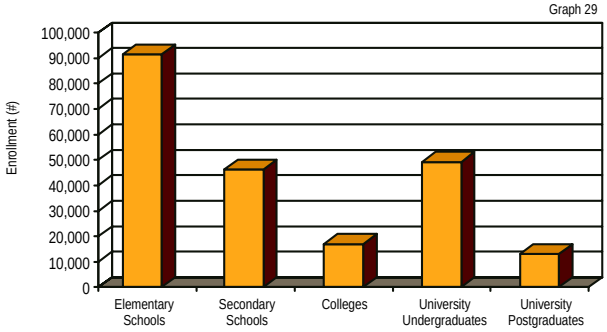
- Of the 292 primary and secondary schools in Ottawa, 79 per cent of schools operate within the two English school boards, with the remaining 21 per cent of schools operating within the French school boards.

Total student enrollment[xiii] as of Oct. 2005 was as follows:

- ► Elementary school (JK-8): 91,462
- ► Secondary school (9-12): 46,255
- ► College: 16,928
- ► University undergraduate: 49,164
- ► University postgraduate: 12,971

Enrollment in Educational Institutions
Universities, Colleges, Secondary and Elementary Schools
Ottawa Region
2005

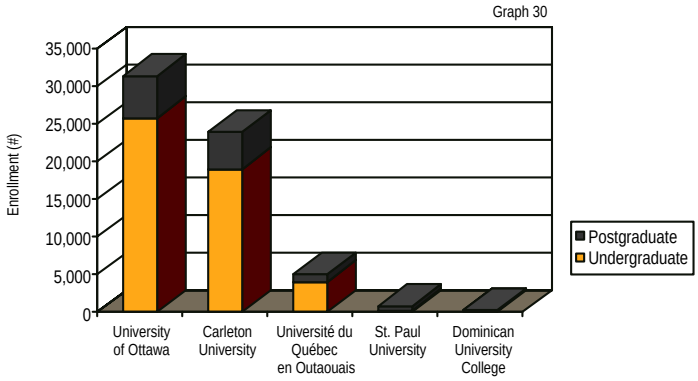
Graph 29



The Ottawa Region is home to five universities: the bilingual University of Ottawa and St. Paul University; unilingual English Carleton University and Dominican University College; and unilingual French Université du Québec en Outaouais. Ottawa's major colleges include La Cité collégiale, Algonquin College and Heritage College.

Post Secondary Student Enrollment - University
Ottawa Region
2005

Graph 30

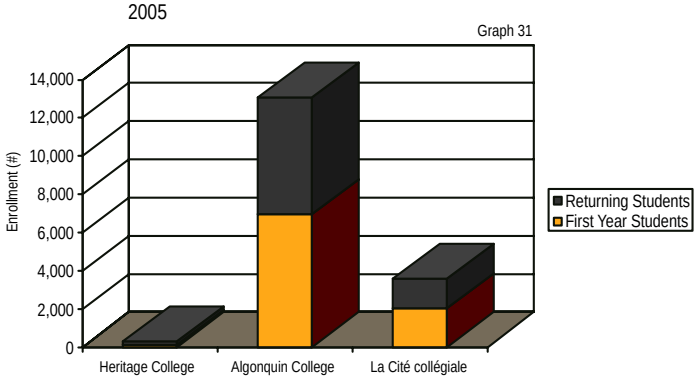


Total university enrollment[xiv] in the Ottawa Region as of Nov. 2005 was as follows:

- University of Ottawa: 31,376
- Carleton University: 23,902
- Université du Québec en Outaouais: 5,035
- St. Paul University: 769
- Dominican University College: 284

Post Secondary Student Enrollment - College
Ottawa Region
2005

Graph 31



Total college enrollment[xv] in Ottawa as of Nov. 2005 was as follows:

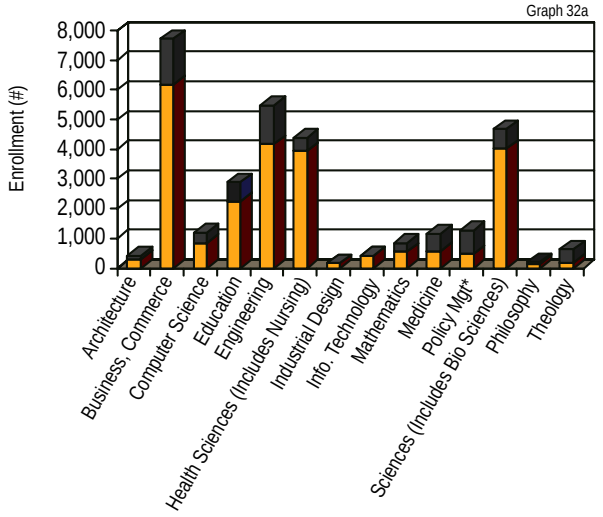
- Algonquin College: 13,074
- La Cité collégiale: 3,579
- Heritage College: 275

More than 10,809 degrees were awarded by the Ottawa Region's three major universities in 2005:

- Undergraduate Certificate and Diploma: 596
- Bachelor: 9,138
- Graduate Certificate and Diploma: 335
- Masters: 1,859
- Doctorate: 189

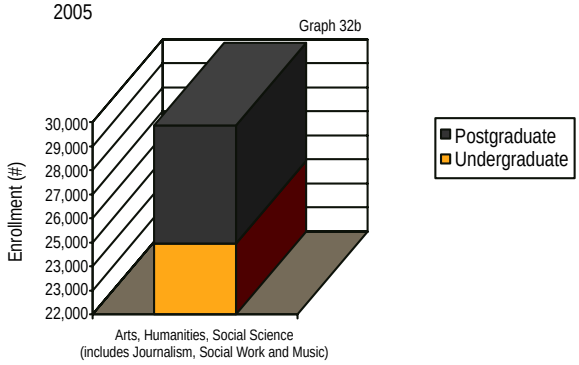
Faculty Student Enrollment - University
Ottawa Region
2005

Graph 32a



Faculty Student Enrollment - University
Ottawa Region
2005

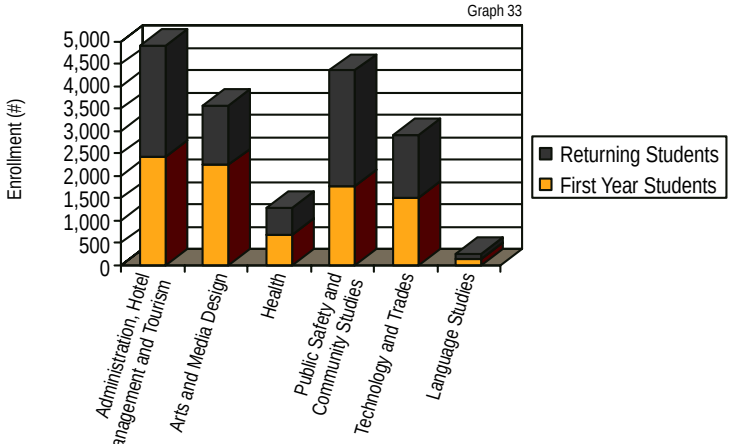
Graph 32b



The largest faculty enrollment at Ottawa's three major universities was in the Arts, Humanities and Social Sciences faculty (49 per cent: 29,864 students), followed by the Business and Commerce faculty (13 per cent: 7,725 students).

Faculty Student Enrollment - College
Ottawa Region
2005

Graph 33



Amongst the colleges, the largest faculty enrollment was within the Administration, Hotel Management and Tourism faculty (29 per cent: 4,921 students), followed by enrollment in the Arts and Media Design faculty (21 per cent: 3,578 students).

Diplomas Conferred
Ottawa Region Universities
2005

Table 7

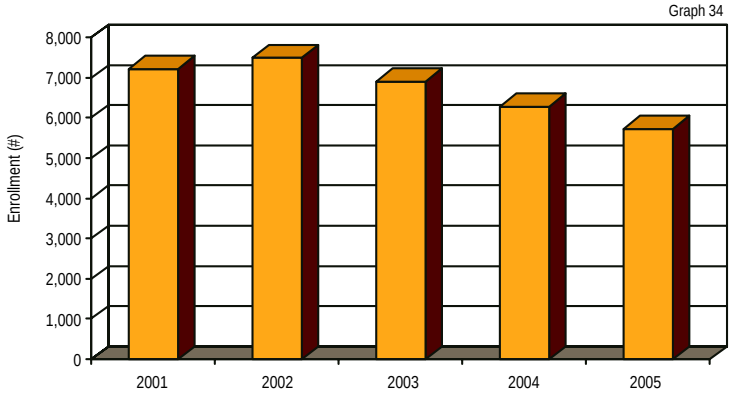
Diploma	University of Ottawa	Carleton University	Université du Québec en Outaouais	Total
Undergraduate Certificate and Diploma	115	26	455	596
Bachelor	5,512	3,132	494	
Graduate Certificate and Diploma	43	13	279	335
Masters	965	817	77	
Doctorate	112	74	3	189
Total				10,809

Key Indicators: Science and Technology Education

Encouraging more students to enroll in post-secondary science and technology courses remains an ongoing strategy for the region.

Enrollment in Science and Technology Programs
Ottawa Region Universities
2001-2005

Graph 34



- Total enrollment in science and technology courses at Ottawa's three major universities has decreased by 21 per cent between 2001 and 2005.
- Within the last 12 months alone, enrollment has decreased by nine per cent.

It is promising, however, to see enrollments within individual science and technology programs beginning to increase again. This can largely be attributed to the enthusiasm once again being seen amongst the student community towards a career in science and technology.

For example, fall 2005 undergraduate and postgraduate enrollment in Computer Science at Carleton University increased by 10 per cent over the previous year.

Key Indicators: Cooperative Education

Ottawa's universities and colleges, together with industry partners, are working to improve students' knowledge of the workplace through increased participation in co-op programs.

- The number of pupils having taken some form of co-op education has increased by close to 21 per cent in the 2005-06 academic year.
- The number of co-op employers providing co-op placements also increased by 27 per cent over the year prior, reflecting the emphasis that Ottawa area employers place on to these co-op programs.
- The average placement rate has increased by 5 per cent over the past year.[xvi]

"Science and Technology will continue to be the engines of Ottawa's economic growth and development. Indeed, Ottawa's global competitiveness is anchored on the sustained and continued growth in research funding and through strategic partnerships between academia and industry."
- Gilles Patry, President, University of Ottawa.

OCRI's Take:

No other element of the local infrastructure is as integral to the ongoing growth of Ottawa's economy as the education system. OCRI has strong links with all of the school boards, colleges and universities within the region. OCRI's Education and Research Program is working on the issue of critical talent development by creating and fostering innovative collaborative initiatives that support skill development at all levels from kindergarten to post-secondary education to the transition to the workplace.

For future prosperity and success, and with the growing need for the region to act globally, the competitiveness of Ottawa's knowledge-based industries will be increasingly dependant on the region's talent base.

Changing market dynamics and global competition require new thinking in terms of labour force development. Integrating immigrants into the workforce remains a priority for Ottawa business and public sector leaders, and initiatives are currently underway to reduce the barriers that halt the transition from immigration to employment and to make Ottawa a 'destination of choice' for highly skilled immigrants. This is reinforced by findings from the 2004 Internationally Trained Workers Project report that found Ottawa's new workforce growth would be 100 per cent supplied by internationally trained immigrants by 2011.[xvii]

It will also be crucial that programs, particularly at the secondary and post-secondary levels, are responsive to the needs of industry, and that graduates are well positioned to be hired from the day that they hit the job market.

As in previous years, Ottawa's colleges and universities will need to work collaboratively with their partners in industry, government and the community to boost student enrollment in science and technology programs, in order to respond to the growing demand for highly skilled workers in the technology sector.

Increasing the number of co-op and job placement opportunities is vital to boosting student participation in science and technology. OCRI is supporting the four school boards to implement new provincial initiatives such as Ontario's Expanded Co-op Credit Program, which allows Ontario high school students to apply two co-op credits towards their core graduation requirements. In addition, OCRI recruits employers willing to provide co-op placements and other learning experiences for secondary students.

OCRI initiated and supported a number of 'school to work' initiatives over the past year in support of the province's Student Success program. These include OCRI's Passport to Prosperity (P2P) program,[xviii] a Ministry of Education sponsored program that enables high school students to explore potential careers by providing work-related experiences such as co-op placements, short-term work experiences, apprenticeship opportunities, job shadowing, career talks and industry tours.

Currently, 200 employers are committed to the P2P program. OCRI also initiates and supports a number of other events and collaborative initiatives under the P2P banner that support career exploration and the transition from school to work for students.

"Ottawa has traditionally always been a world-class hub for industry, government and academic development and collaboration. Combined with a highly-educated and skilled workforce, Ottawa serves as fertile tech ground for the R&D and innovation initiatives necessary to successfully compete within a global knowledge-based economy."

- John Roese, CTO, Nortel

These programs include:

- *Youth Science and Technology Outreach Program* – Initiated by Carleton University, the Ottawa-Carleton District School Board and OCRI, and funded by the Ministry of Research and Innovation, this program is designed to inspire youth in secondary schools to consider careers in science, engineering, and technology. The program will include student tours of science and technology businesses and research laboratories, and create new co-op placements at local research institutions. Partners include: Carleton University (lead); the Ottawa-Carleton District School Board; the Ottawa-Carleton Catholic School Board; Le Conseil des écoles catholiques de langue française du Centre-Est; and Le Conseil des écoles publiques de L'Est de L'Ontario.; the University of Ottawa; Algonquin College; NRC; Nortel; Telesat; Big Brothers and Big Sisters; Actua; and the Youth Services Bureau.

- *Career Link 2006* – A one-day forum co-sponsored by Vitesse Re-Skilling Canada and PASS (Partnering to Articulate for Student Success) in partnership with OCRI and others. The forum brought together high school career/guidance counselors from across Eastern Ontario with representatives of Ottawa's technology industry. Topics of discussion included industry skill needs, estimated demand for graduates in the field, and opportunities for co-op placements or mentorship programs.

- *Algonquin Connections* – This five-day event at Algonquin College provided vital hands-on career exploration opportunities (with a focus on the skilled trades) for intermediate and secondary students. Partners included: Algonquin College, Ottawa-Carleton District School Board, Ottawa-Carleton Catholic School Board, PASS, and OCRI.

- *A Special Day for Girls: Design Tomorrow's World* – 40 students in Grades 8-12 alongside their female math/science teacher mentors attended this pilot workshop at Carleton University. The goal was to promote engineering, science, and technology to girls through mentoring from young women in university. Students were encouraged to become Pathmakers (ambassadors) for other girls in their class and school. Partners included: Carleton University, University of Ottawa, Ottawa-Carleton District School Board, Ottawa-Carleton Catholic School Board, and OCRI.

According to a recent study by the Canadian Millennium Scholarship Foundation, almost 70 per cent of replacement and new jobs call for post-secondary education or formal training. Industry changes are shaping the demands for IT graduates and the region should anticipate a growing demand for technological expertise. In order to encourage growth within the technology sector, post-secondary institutions will need to continuously and systematically review their curricula to ensure it meets the needs of graduates and industry. It is also imperative that employers become more receptive to hiring recent graduates.

Along with technical proficiency, students must be equipped with the necessary soft skills (including interpersonal communication, presentation and teamwork) that make them immediately eligible for hiring upon graduation.

Akin to the rest of the Western world, Ottawa is set to experience challenges due to the increasing technology skills gap as an aging baby boomer workforce retires in significant numbers and fewer students choose technology as a career path.

With a two per cent unemployment rate, the Canadian IT industry is outpacing the national economy in general (6.5 per cent). While the Canadian high tech sector appears to have stabilized, more needs to be done to encourage continued growth and combat the 50 per cent drop in IT and computer science enrollment over the past five years at Canadian post-secondary institutions.[xix]

More also needs to be done to encourage diversity. Currently, for example, between 10 to 15 per cent of technology students attending Canadian colleges and institutions are female.[xx]

There is room for optimism however, as University of Ottawa co-op students studying in either computer science or software engineering have seen a significant increase in the number of co-op placement opportunities over the last two years. In some faculties, co-op departments had an average of 14 postings opportunities per student. The competition for these students is increasing to the point where some companies have returned to doing 'Catered On-Campus Information Sessions' and organized company tours to attract co-op students.

Ultimately, the rewards will be reaped by companies that recognize the future value in today's students and put in place strategies to ensure their integration into the workforce. To close the tech skills gap, OCRI advocates that companies focus on the acquisition of advanced skills to boost job productivity. Firms should look at developing and deploying new technology, protecting their infrastructure and enhancing their commitment to critical talent.

"Algonquin College is a dynamic centre for applied education and training which is integrated with our region's economy and employment needs. Our commitment to student success continues to provide the local workforce with job-ready, skilled graduates trained by experienced industry professionals in our leading-edge facilities. The College continues to prepare tomorrow's leaders who will shape and strengthen the communities we serve."

- Bob Gillett, President, Algonquin College

Credits

The Ottawa Report 2007 – Economic, Technology and Education Indicators is published by OCRI (the Ottawa Centre for Research and Innovation).

Special thanks must go to the following individuals and organizations that were patient with our many information and statistical requests:

- Ian Cross and Alain Miguelez, City of Ottawa
- Annlee Chad, the Impact Group, RE$EARCH Infosource Ltd.
- Mario Lefebvre and Alan Arcand, Conference Board of Canada
- Kristina Dion, Cushman and Wakefield LePage
- Misty Wade Hovey, Ottawa Tourism and Jeff Baker, Decima Research
- Michael Crockatt and Karen Hakib, Ottawa International Airport Authority
- Pierre Mercier and Reza Mashaie, University of Ottawa and St. Paul University
- Ian Calvert, Kerry Eamer and Sue Gilmour, Carleton University
- Pierre Tessier, Julie Regimbal and Louise-Marie Thomassin, Université du Québec en Outaouais
- Hermance Mensah, Dominican University College
- Jacinthe Mutchmore, Lucie Boisvert, Jocelyn Agnew and Lina Léveillé, La Cité collégiale
- Cathie Edmond, Dawn Dubé, Stephen Robinson, Deborah Rowan-Legg, Algonquin College
- Jo Anne Werner, Heritage College
- Franca Caluori, Conseil des écoles catholiques de langue française du Centre-Est
- Serge Boulé, Conseil des écoles publiques de l'Est de l'Ontario
- Hazel Lambert, Ottawa Carleton Catholic School Board
- Joan Oracheski and Lisa Gowans, Ottawa Carleton District School Board
- Micheal J. Kelly, Dean of the University of Ottawa School of Management

The Communications Division at OCRI was mandated to coordinate the document's production and dissemination.

- Jeffrey Dale, President of OCRI, was responsible for the project's strategic direction
- Ryan Patrick, Senior Writer at High Road Communications, authored the report
- Alecia O'Brien, Marketing and Communications Manager, OCRI, gathered the data and led editorial direction
- Alex Pugh, Creative Services and Communications Manager, OCRI, coordinated the document's production

Appendix: Statistical Sources

ECONOMIC DEVELOPMENT		
Graph 1	Population	City of Ottawa estimates. Includes Ottawa CMA and Gatineau CMA
Graph 2	Building Permits	Statistics Canada
Graph 3	Housing Starts	Canada Mortgage and Housing Corporation
Graph 4	Vacancy Rate, Ottawa Office Market	Cushman and Wakefield LePage. Average amount taken across four quarters. Includes CBD, downtown, Byward Market, Kanata, Ottawa West and East, Nepean and Gloucester
Graph 5	Consumer Price Index	Conference Board of Canada, Metropolitan Outlook, Winter 2007
Graph 6	GDP	Conference Board of Canada, Metropolitan Outlook, Winter 2007
Graph 7	Personal Income per Capita	Conference Board of Canada, Metropolitan Outlook, Winter 2007
Graph 8	Retail Sales	Conference Board of Canada, Metropolitan Outlook, Winter 2007
Graph 9	Tourism Indicators	Ottawa Tourism Council Authority
Graph 10	Labour Force Indicators	Statistics Canada
Graph 11	Employment by Sector Type	Statistics Canada
Graph 12	Companies in Knowledge-Based Industries	OCRI Technology Industry Survey
Graph 13	Employees in Knowledge-Based Companies	OCRI Technology Industry Survey
Graph 14	Companies in Knowledge-Based Industries by Size	OCRI Technology Industry Survey
Graph 15	Companies in Knowledge-Based Industries by Cluster	OCRI Technology Industry Survey
Graph 16	Employees in Knowledge-Based Companies by Cluster	OCRI Technology Industry Survey
Table 1	Knowledge Based Employers in Ottawa	OCRI Technology Industry Survey
Table 2	Knowledge Based Employee Gainers	OCRI Technology Industry Survey
INNOVATION AND COMMERCIALIZATION		
Graph 17	Sponsored Research Income, Ottawa Region Universities	RE$EARCH Infosource
Graph 18	Corporate Research Income, Ottawa Region Universities	RE$EARCH Infosource
Graph 19	Research Intensity, Ottawa Region Universities	RE$EARCH Infosource
Table 3	Research Intensive Universities	RE$EARCH Infosource
Table 4	Top 100 Ottawa-based Corporate R&D Spenders	RE$EARCH Infosource
Table 5	Top 100 Ottawa-based Corporate R&D Spenders by Sector	RE$EARCH Infosource

INNOVATION AND COMMERCIALIZATION		
Table 6	Venture Capital Investment 2006	OCRI Entrepreneurship Centre. Includes disclosed deals only
Table 7	Venture Capital Investment 2006 Cluster Breakdown	OCRI Entrepreneurship Centre. Includes disclosed deals only
Graph 20	Venture Capital Investment Trailing 12-month Total	OCRI Entrepreneurship Centre. Includes disclosed deals only
Graph 21	Venture Capital Investment by Cluster	OCRI Entrepreneurship Centre. Includes disclosed deals only
Graph 22	Venture Capital Investment, Life Sciences and Cleantech Sector	Thompson Financial, OCRI Life Sciences. Includes disclosed deals only
Graph 23	Average Venture Capital Deal Size	OCRI Entrepreneurship Centre. Includes disclosed deals only
CRITICAL TALENT		
Graph 24	Population by Language Groups	Statistics Canada, 2001 Census. Ottawa CMA only
Graph 25	Top Five Non-Official Languages	Statistics Canada, 2001 Census. Ottawa CMA only
Graph 26	Language of Instruction at Universities and Colleges	Includes data from Carleton University, University of Ottawa, St. Paul University, Dominican University College, La Cité collégiale, Algonquin College and Heritage College. Fall 2005 Registrations.
Graph 27	Enrollment at French and English School Boards	Includes data from Ottawa-Carleton District School Board, Ottawa-Carleton Catholic School Board, Conseil des écoles publiques de l'Est de l'Ontario and Conseil des écoles catholiques de langue française du Centre-Est Data as of November 1, 2005. Includes adult, full and part time students
Graph 28	Proportion of Schools Within School Boards	As above. Includes elementary, secondary, further education, technical and alternative schools
Graph 29	Enrollment in Educational Institutions	School boards as above; Carleton University, University of Ottawa, St. Paul University, Université du Québec en Outaouais, Dominican University College, La Cité collégiale, Algonquin College (does not include data from Algonquin College in the Ottawa Valley) and Heritage College. Fall 2005 Registrations.
Graph 30	Post Secondary Student Enrollment - University	As above

CRITICAL TALENT		
Graph 31	Post Secondary Student Enrollment - College	Includes data from La Cité collégiale, Algonquin College and Heritage College. Fall 2005 Registrations
Graph 32	Faculty enrollment in Ottawa - Universities	Includes data from Carleton University, University of Ottawa, St. Paul University, Université du Québec en Outaouais and Dominican University College. Fall 2005 Registrations
Graph 33	Faculty enrollment in Ottawa - Colleges	Includes data from La Cité collégiale, Algonquin College and Heritage College. Fall 2005 Registrations
Table 7	Diplomas Conferred at Ottawa Universities	Includes data from Carleton University, University of Ottawa, and Université du Québec en Outaouais
Graph 34	Enrollment in Science and Technology Courses at Ottawa Universities	Science and technology courses as designated by Carleton University, University of Ottawa, and Université du Québec en Outaouais

Endnotes

i AETRA is a joint venture between the International Air Transport Association and the Airports Council International, and is an airport customer satisfaction benchmarking program that provides demographic and travel profiles and compares airport performance for 31 service items at 65 airports worldwide. The survey is conducted quarterly and offers unparalleled insight into customer satisfaction and loyalty. See Ottawa Macdonald-Cartier International Airport Authority Annual Report 2005

ii The Integrated Waste Management Master Plan, City of Ottawa

iii Labour Force Survey, Friday January 5, 2007

iv Statistics Canada, Table 282-0053

v Dell News Release, November 2006

vi Statistics Canada

vii TOP Delegation to Queen's Park Brochure

viii Biotech blitzes federal politicians in Ottawa.*Ottawa Business Journal*, September 27, 2005.

ix RE$EARCH Infosource, November 2006

x Thompson and McDonald

xi Visit www.ottawacapitalnetwork.com

xii Statistics Canada, May 2006

xiii Includes full time, part-time, and adult students in the Ottawa census metropolitan area

xiv Includes full time and part-time, degree students in the Ottawa and Gatineau census metropolitan area

xv Includes full time and part-time students for post-secondary, post-diploma and tuition short programs in the Ottawa and Gatineau census metropolitan area

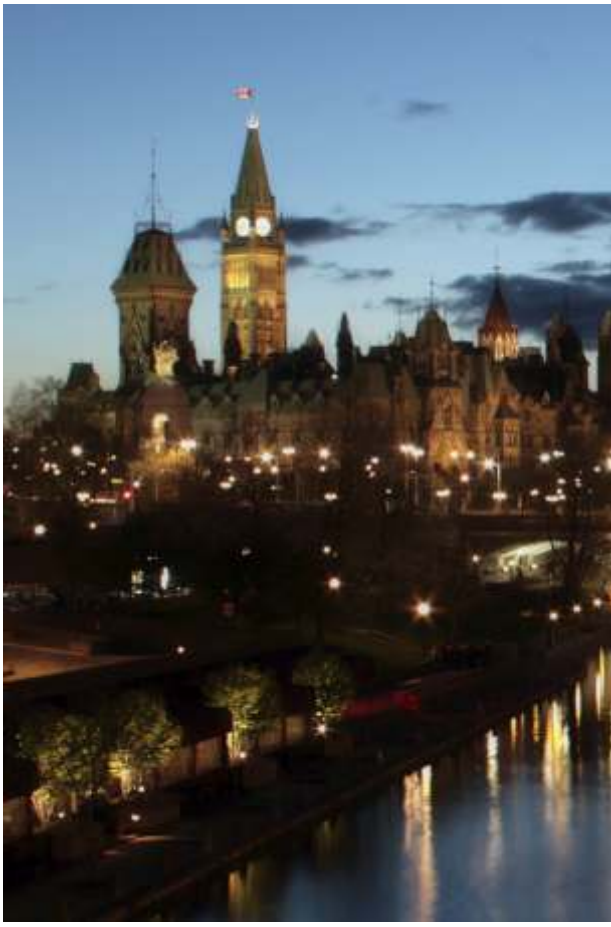
xvi Includes data from Carleton University, University of Ottawa, St. Paul University, Dominican University College, La Cité collégiale, Algonquin College and Heritage College. Fall 2005 Registrations

xvii Internationally Trained Workers Project

xviii Visit http://www.ocri.ca/education/p2p.asp for more information

xix By Karen Van Kampen. High pay, plenty of jobs, but few students: it doesn't compute. Young Canadians shy away in droves from the strengthening IT sector. *The Globe and Mail*, September 27, 2006.

xx Ibid



OCRI
LEADING THE WAY FOR OTTAWA.

200-2625 Queensview Drive • Ottawa, Ontario CANADA • K2B 8K2
Tel: 613-828-OCRI • www.ocri.ca