

THE ONTARIO BUSINESS REPORT

May 2001

Published by the Ministry of Economic Development and Trade

Ontario's construction sector hard at work



The construction industry plays a major role in provincial job creation, providing 325,000 jobs in 1999.

News reports often focus on slow economic growth and downturns. Despite slowdowns in some sectors, Ontario's economic growth remains healthy. Ontario's construction industry is a true tale of optimism. While construction is not without its challenges, it's one area that demonstrates Ontario is hard at work.

Three broad categories make up the construction sector in Ontario: residential; non-residential – ICI (institutional, commercial, industrial building); and engineering.

Construction accounts for close to five per cent of the national GDP. This is roughly equal to the combined contribution of the two largest manufacturing sectors – transportation equipment and electronic products. Ontario itself accounts for 30 per cent of the total construction expenditure in Canada.

A profile of organizations and key players within the sector shows they are entrepreneurial and pragmatic, making a significant contribution to the economy's growth and general optimism.

The construction industry plays a major role in job creation providing 325,000 jobs in 1999, nearly 11 per cent of the province's total employment. This figure is almost double the number employed within the automotive sector and more than five times the number of jobs in the chemical industry. Surveys indicate that for every new construction job, three more are created in the general economy – a strong multiplier effect on the economy as a whole.

Among its highly competitive advantages is the sector's strong educational profile. Construction industry associations and corporations recognize the importance of early trade skills development. They are actively changing people's perception of the

continued on page 2

Skills training gets a boost
page 2

■
Building Ontario's homes
page 4

■
Biotechnology is growing
page 6

■
Chinese Canadian Entrepreneurs
page 12

Ontario's construction sector hard at work

PROJECT	INVESTMENT
Pearson International Airport redevelopment	\$4.4 billion
Sprint Canada Telecom Complex (Toronto)	\$300 million
Niagara Falls Casino Complex	\$650 million
Casino Rama (Orillia) expansion	\$225 million
St. Joseph's Hospital (Hamilton) addition and expansion	\$110 million
Peterborough Civic Hospital (proposed)	\$53 million
Toyota Plant (Cambridge) expansion	\$650 million
Dow Chemical Plant (Sarnia) environmental upgrades	\$100 million

industry by developing and nurturing young talent with active high school programs and significant investment.

Further proof of long-term growth is the exceptional \$9 billion investment by the public and private sectors for various ICI projects now underway or proposed across the province. Above are just a few regional highlights. The construction industry's main strength is its skilled and educated labour

force; over 46.6 per cent of its employees have some post secondary or higher education. In fact, construction is the second largest employer in the province.

The Ontario government has committed \$130 million to the Strategic Skills Investment Program to fine tune the alignment between learning opportunities and the skilled people employers need in order to continue to grow and compete. The

government is prepared to work with employers, unions and post-secondary institutions to do more.

Internationally, Ontario's construction industry is competitively positioned. Results of a recent KPMG study found that the province's construction sector has the lowest industrial building costs on average among the G7 countries. However, its domestic orientation and dominance of small firms increases its vulnerability to cyclical downturns in the economy.

Skilled trades shortages, an aging work force, declining apprenticeship registrations and the growth in underground activity are the sector's main challenges.

Projections for continued growth in the construction sector are positive. Housing starts are at record levels. A recent survey conducted by *The Globe and Mail* concluded that the public is beginning to see real job opportunities in construction and the trades. All in all, a positive story and an outlook for building a bright future for Ontario.

Training Institute combats skills shortages



MEDT Minister, Bob Runciman operates a large excavator at OETI event held in March.

Skills training in Ontario got a boost from the provincial government and its partners in March.

Bob Runciman, Minister of Economic Development and Trade, presented a cheque for \$2.33 million to the Operating Engineers Training Institute of Ontario (OETIO). The OETIO, located in Morrisburg, received the funding for heavy equipment and crane operator training. Through the OETIO program, 250 operators will be trained each year.

"The OETIO offers solutions to crane and heavy equipment operator shortages" said Gerry Hughes, Director OETIO.

Runciman said, "Developing a skilled work force is key to a strong economic future. Upgrading skills of employees in the heavy equipment industry is vital for this sector. Skilled workers strengthen the competitiveness of businesses and industry in Ontario, improving productivity, creating jobs and contributing to the growth of our economy."

Funding from the Ontario government's Strategic Skills Investment Program is part of the total \$17 million value of the project that comes from business and education partners across Ontario.

Giffels Design/Build offers turnkey solutions



Michael LeGresley is Vice President of Giffels' Design/ Build Group.

“We had a brilliant quarter, our best quarter ever for new contracts. We wrote a million square feet of new contracts across seven jobs. It might be an industry record,” states Michael LeGresley, Vice President of Giffels Design/Build Group.

The 52 year old Canadian company, a division of Giffels Construction, based in Toronto, specializes in the design/build concept that is predominant in Europe. “Design/Build uses the skills of the supply chain differently than design construction management where detailed design is downloaded to the trade level. We’re unique in that we have full service, in-house design. The advantage is twofold. Trades are able to provide you an early fixed price, if they control design and lock in the time frame better. We come in wearing both contractor and designer hats guaranteeing a tighter delivery and price,” said LeGresley.

In true turnkey fashion, Giffels will buy the land, construct the building, provide financing, and lease the land to the tenant. As a national company, they repeat this process anywhere as both merchant and landlord.

LeGresley believes the construction sector in Ontario is well-positioned. Toronto is the second largest industrial marketplace in North

America. It has evolved farther than many other markets including the U.S., where developers dominate.

When it comes to design/build potential in Ontario, there's plenty of it. In Toronto alone, there is approximately 600 million square feet of industrial product, and it's growing at 15 million square feet per year. In the Kitchener/Cambridge/Waterloo area there's about 55 million square feet. This is as big as opportunities in the cities of Edmonton or Calgary.

Historically, construction margins are low, averaging about three per cent. High volumes are needed. There is very high risk and very little money. “As property landlord we can choose to add a contingency to our margin or to not add it and remain competitive. By wearing two hats and underwriting the one risk, it's more efficient and we deliver solutions quicker,” said LeGresley.

As for new contracts, LeGresley stated that growth is in warehouse design/build.

He is pleased with the relationship Giffels established with one of its new warehouse clients, Vancouver-based Future Shop. At 41,806 square metres the Brampton space is as big as an office building, only spread out.

Just-in-time distribution technology is in place that allows almost instant stock replenishment after a sale is made. Giffels' logistics group handled the distribution consulting.

According to LeGresley, “Future Shop is a relatively new company, only 20 years old. As with Canadian Tire or Sears, they were prepared to give us the reins. ‘You are the experts, help us out.’ It was a pretty easy sell.” LeGresley still finds some industries hesitate to hand over all planning aspects.

Giffels' engineers, project managers and other specialists are internationally recognized. They've designed a Honda plant in Alabama. In Dubai, Giffels is erecting the largest office building in the Middle East.

LeGresley recognizes Giffels' ability to benefit the Ontario economy in general. “We hope to help people run their businesses more efficiently. We design business solutions as opposed to just buildings.”

VIEWPOINT



Construction cranes are rising across Ontario. In towns and cities around the province homes are being built, industrial and commercial buildings are going up, and jobs are being created. The construction sector is telling a truly optimistic tale.



In this issue of *The Ontario Business Report*, we focus on the construction sector and biotechnology. In each of these areas, we profile companies that are innovative, creative and competitive. They're representative of the many successful construction and biotechnology businesses found across the province.

Certainly, as the cranes indicate, the construction industry is hard at work. Housing starts are at record levels. There are institutional, commercial and industrial projects worth \$9 billion underway or proposed across the province. The industry provides 325,000 jobs, nearly 11 per cent of the province's total employment. And as anyone who has ever bought a property knows – furnishings, landscaping, appliances and more, follow closely behind. It's no surprise that for every new construction job, three more are created in the general economy.

As for biotechnology, this growing sector is a key engine for economic growth. Ontario is ideally positioned to become a world leader in the biotech revolution. The diversity of this field is astounding. It's having an enormous impact on our ability to predict, diagnose, prevent and treat disease, and it's harnessing the power of information technology to analyze biological data. In every area, it's bringing new opportunity and highly skilled, lasting jobs to Ontario.

Our government is working with research and academic institutes and the private sector across Ontario to support innovation, encourage the march of ideas from the lab to the marketplace, and increase our province's competitive advantage in this area.

The construction and biotechnology industries are just two of many thriving sectors in Ontario. Our government's commitment to lower taxes, reduce red tape and offer incentives for research and development has meant increased opportunity for business development, growth and new building. We are committed to ensuring that these industries, and all of Ontario's industries, continue to grow.

Bob Runciman
Minister of Economic Development and Trade

Building Ontario's homes

Ray Williamson Developments, Thunder Bay

Ray Williamson wants to wire Ontario. The Thunder Bay developer has carved a niche for Ray Williamson Developments Ltd. by building communities of "smart homes," designed to take advantage of new technologies.

He believes in removing the isolation that many seniors feel in their homes. The company is currently building 60 smart homes for seniors in the Sterling Village subdivision of Thunder Bay. A high-tech computer system in each home controls and monitors household utilities, security and lighting. Fibre-optic connections provide high-speed Internet access, videoconferencing and online shopping. By partnering with local business, the smart homes offer education over the Internet, and participating stores, including pharmacies, offer door-to-door delivery.

"At the beginning, people are afraid of the technology, but it's user-friendly. The quality of life is 100 times better. For example, health care providers can assess a resident and transmit current information online directly to the office or the doctor. You can videoconference with your doctor. I call it progressive medicine," said Williamson.

His current project is revitalizing the Town of Haileybury on the Ottawa River (pop. 4,600) making it the first smart recreational/retirement community in Canada. The 1,471 residential units will be energy efficient, wired and healthy homes as well. "We are trying to ensure longevity for the community. We work with colleges and businesses in the area preparing them for the 21st century. We're in it for the long haul," explains Williamson. "It's nice to get involved in communities that extend themselves for you."

Williamson is in demand by communities around the globe. But, first, he plans to take his smart home concept to rural areas of northwestern Ontario. He is confident his homes will serve as a model for Canadian housing developments and will show how technology can improve the quality of life, help residents remain independent, and stay connected with their community.

Gregor Homes, Barrie

Barry Green and Paul Gordon get personally involved with their clients. As partners in Gregor Homes, "We get to know each of our clients on a first name basis before we start construction. We work from 20 different plans to customize a Gregor home. No two houses are the same," explains Green.

The personal touch extends to Green's seven person support team. Building a specific number of homes each year also gives them time for individual attention. "We limit ourselves to about 50 homes a year. We can build a house in this fashion. There are fewer layers involved."



Paul Gordon, (on left) and Barry Green of Gregor homes.

Bayfield Links, Country Club Estates and Osprey Ridge are the company's three sub-divisions located at Barrie's north-east corner, adjacent to the township of Springwater. Bayfield Links, the newest development of 564 units, has recently completed its model home. Being developers and builders has its benefits. "We get to choose the nicest lots. We tend to have a lot of walk-out lots, ravine lots, and lots backing onto green space."

Gregor Homes include many features that are often extras in other developments. "Our homes are priced a little higher than the average builder. You can see the difference right away. It's a modest premium; we still have to offer value," said Green.

Barrie has been growing at several thousand homes per year making it one of the fastest growing cities in Canada. The economy is healthy with little unemployment. "The bulk of Barrie is planned out. In two or three years there will be no single family lots available. All lands are draft plan approved."

Whatever the future for the local area, Gregor will be in the picture.

continued on page 5



Ray Williamson is building communities of "smart homes."

Chant Construction is building business

There's a new player in civil construction. Chant Construction Limited is only three years old. However, its staff have many years of experience providing infrastructure design and construction services to both the public and private sector.

Its skilled engineers and project managers have worked on such high profile projects as Ontario Place and the rehabilitation of the Welland Canal. "Our people build projects, not companies," explains President and CEO Ted Chant.

In addition to its head office in Aurora, Chant has established offices in Ontario and British Columbia. The company employs 18 full-time staff in Ontario and 12 in Alberta/B.C. "There is a great deal of work in Alberta. In B.C. we're pursuing transit and B.C. Hydro work."

Completed projects to date include a sewage treatment facility in Creemore, and a subdivision in Port Perry, Ontario. Active projects involve a \$22.1 million transmission system contract for Yukon Energy and a construction management job for Great Lakes Power's High Falls redevelopment project near Wawa.

Chant's vision is to be a direct hire organization. "We like to hire trades and build things. The nature of the marketplace, especially in urban centres, is more conducive to general contracting. More of our work is becoming general contracting. Even on the Yukon



Chant Construction's President and CEO, Ted Chant.

project there are quality subcontractors we'll use. It's becoming the model for the industry."

Chant is blunt when assessing the nature of business relationships in the heavy civil construction industry. "Traditionally the business is adversarial." But he is quick to recommend his company's successful solution. "It's a people industry. It's about solving problems together. If it's good for the project, it's good for all of us."

One avenue Chant is eager to pursue is the company's association with First Nations developments. His first exposure to

First Nations projects was in the mid-1990s. "I found there was a void of people who wanted to make commercial arrangements with Natives work." He felt that if he and his associates could put their minds to it and focus on developing real partnerships that combined First Nations talent with their own in-house skills, they could develop long-term business relationships. "If we could mesh that, we could find a real niche."

His instincts were right. Currently Chant has three first nations projects in place and ready to go. One is with the Wahnapiatae First Nation near Sudbury for maintenance and decommissioning works at mine sites in the area. Another, a joint venture with the Michipicoten First Nation for a 1.75 megawatt hydro-electric project, is awaiting final negotiations with the local utility.

The most current project is DelChant, a partnership with the Athabasca-Chippewyan First Nation in Fort McMurray, Alberta. "Both parties bring something to the table. They have commercial undertakings on the go and are well-established but they don't have management expertise. We bring the expertise and the resources, but don't have the presence." Chant agrees that all three first nations understand the premise of "finding a sustainable business and the jobs will follow."

Chant is always looking for win/win opportunities.

continued from page 4

Building Ontario's homes

Mountainview Homes, Niagara Region

Mark Basciano credits the success of Mountainview Homes to flexibility, a willingness to make changes to design, and after sales service. The family-owned and operated developer has been in business in the Niagara Region for 24 years. Each family member lives in a Mountainview home.

"Our best advertising is word of mouth. Many of our purchasers are second or third time buyers. They bought their first home

with us. Then they buy their move-up home with us and finally their retirement home," explains Basciano.

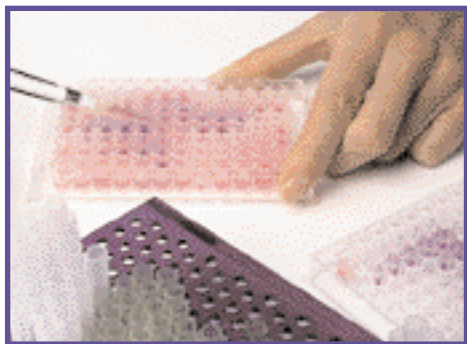
Mountainview has nine sites under development throughout Niagara Region in Beamsville, Fonthill, St. Catharines, Thorold and Niagara Falls. "We develop the raw land, an empty field, and develop the fabric of the community. It's a beginning-to-end process for us." Developments range in size from 30 lots to 1,200 lots. Basciano feels they offer something for everyone including handicapped-accessible homes. "We're seeing

an improvement in the market with move-up buyers. There is steady growth."

There are close to 450,000 people living in Niagara Region, and with government support for a growing wine industry, tourism and the Casino, they expect new jobs, investment and growth. "Lifestyle benefits are important for home buyers," adds Basciano.

In addition to building homes, the company also develops and builds industrial/commercial space and owns three business parks in the region.

Ontario firms propel growth of biotechnology sector



Ontario is home to 111 of 361 biotech companies across Canada.

Biotechnology is essentially the use of living organisms to develop medicines, foods and other products, and includes helping protect the environment. It is a word with which Ontarians are becoming increasingly familiar, for the biotech industry touches people in an extraordinary number of ways. For instance, the industry:

- produces drugs to treat cancers, AIDS, and diabetes, and vaccines, antibiotics and more;
- produces diagnostic products to help doctors identify disease, screen blood and perform life-saving tests;
- improves plant and animal productivity by preventing disease, reducing pesticide use and improving nutritional quality and shelf life of food;
- uses naturally occurring bacteria and other organisms to protect and restore the environment. This includes breaking down pollutants and toxic wastes, and cleaning up wastewater.

"Biotechnology is very important in Canada. We are second in the world, next to the United States, in terms of the number of companies and the number of approved products that we have," said Eileen Inrig, Director of Communications for BIOTEC Canada. "We also have a very strong regulatory system, and this is encouraged by the industry." The industry also works hard to dispel any myths or concerns about genetic engineering of food or crops. Canada has a history of 100 per cent safe use of foods produced through biotechnology.

A survey released earlier this year by Statistics Canada entitled "Biotechnology Use and Development Survey – 1999" shows growth in every sector of biotechnology, with just over

40 per cent of firms concentrated in the human health sector. In 1999, Ontario was home to 111 of 361 biotech companies across Canada. Ontario leads the nation in biotechnology revenues at \$635 million, approximately one-third of the national total. In 1999, Ontario companies spent \$222 million on biotechnology research and development, more than one-quarter of the R&D spending across Canada. That figure is expected to increase by almost 60 per cent by 2002.

"Our government recognizes that biotechnology is one of the key fields of research and innovation that will bring highly skilled, lasting jobs to Ontario," said Jim Wilson, Minister of Energy, Science and Technology. "I am proud to say that Ontario is emerging as a major North American centre for biotechnology, R&D innovation and industrial growth."

Ontario does have an outstanding track record in biotechnology. This includes discovering an astonishing 25 per cent of human disease genes in recent years; to becoming a major player in the area of ag-biotechnology; to pioneering in the new age of bio-informatics which uses information technology to analyze biological data. Regional biotechnology clusters* have been developed around academic centres in Toronto, Ottawa, London, Guelph, Kingston and Hamilton.

Across Canada, small operations (50 employees or less) make up 75 per cent of biotechnology firms. Eleven per cent are large firms (151 or more employees) and these account for 70 per cent of biotechnology revenues and 60 per cent of research and development. The average length of development time from lab to an approved commercial product in the area of health care is about 10 years. For food products, development takes an average of seven to 10 years.

"The potential for growth in this industry is huge, particularly with human health care and an aging population," said Inrig. "As we learn more about the human genome, drugs, both traditional and biopharmaceutical, can be much better targeted to deal with disease disorders."

**clusters: referring to the practice of companies to establish themselves in areas or "clusters" where similar industry or business already exists. By doing so they may better partner on projects, and establish business-to-business relationships.*

Ontario government programs support the growing biotechnology sector

The government of Ontario has recognized the increasing importance of the biotechnology sector to the economic growth of the province and to the creation of highly skilled jobs. It supports this industry, and its key field of research and development, through the following programs:

Biotechnology Commercialization Centre Fund:

A \$20 million investment over four years to help create regional commercialization centres for start-up biotech firms, and to boost Ontario's competitiveness in the biotechnology industry. To date, biotechnology incubation centres have been established in Ottawa, Toronto and London.

www.est.gov.on.ca/English/st/st_BCCFOverview.html

Ontario Research and Development Challenge Fund:

A \$500 million, 10-year program to promote research excellence by increasing the R&D capacity of Ontario universities and other research institutions through private and public sector partnerships. Contributions by partners are expected to bring the total investment in R&D through this fund to \$2.5 billion.

www.ontariochallengefund.com

Ontario Innovation Trust: A \$750 million program to help fund research equipment and infrastructure at universities, colleges, hospitals and research institutions.

www.oit.on.ca/ehome.html

Premier's Research Excellence Awards:

A \$75 million initiative over 10 years to help ensure that Ontario attracts and retains the pre-eminent researchers it needs to keep Ontario's research capacity at an international level of excellence.

www.est.gov.on.ca/english/st/st_preas.html

Ontario Research Performance Fund:

More than \$30 million per year to help cover overhead costs for researchers conducting Ontario-funded research.

www.est.gov.on.ca

Ontario Genomics Initiative: A \$75 million program over five years to boost the province's capability in genomics research.

www.est.gov.on.ca

Ontario Cancer Research Network: A three-year, \$50 million initiative to accelerate research on promising new cancer therapies.

www.est.gov.on.ca

The Ontario government has also introduced several tax incentives to support private sector investment in research and development, including a tax credit for business-sponsored R&D carried out by universities and other research institutions in the province.

Canada's largest vaccine company helps prevent and treat disease worldwide

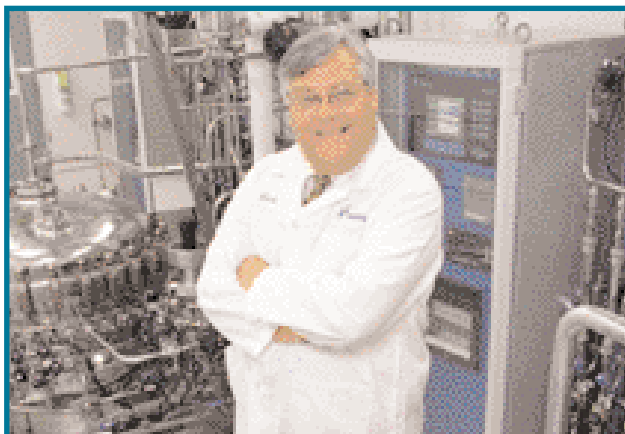
Modern vaccines are sophisticated products of biotechnology. They are produced to exacting quality standards and subjected to continuous scrutiny. Aventis Pasteur, a subsidiary of the world's largest life sciences company Aventis, is the global leader in providing these products.

"Historically, our focus has been on vaccines that prevent infectious diseases. We are now expanding that to include vaccines that can be used to treat disease," says Mark Lievonon, President of Aventis Pasteur in Canada. "By developing, manufacturing and distributing vaccines, we are having an impact on the world in terms of preventing disease and saving lives. It's a mission that motivates us and drives everyone who works within our company."

Aventis Pasteur in Canada, began as Connaught Laboratories, established in Toronto in 1914. This Canadian division employs 1,000 people, one third of whom are researchers. It has three principal activities with respect to vaccines: sales and marketing efforts which focus on the Canadian market; manufacturing and supply activities for Canada and the rest of the world; and research and development activities that are part of global mandates programs.

The company's present portfolio consists of 30 vaccines, which protect against 17 diseases. "Investing in research and development is the lifeblood of this company, and of all companies in our industry, and successfully developing new products remains the most important challenge," said Lievonon. One recent success is Pentacel, launched in 1997 and acknowledged now as the gold standard of childhood vaccines. This vaccine was researched, manufactured and licenced in Canada. With one shot, it provides protection against five diseases: pertussis (whooping cough), polio, diphtheria, Hib (Hemophilus influenzae type b) and tetanus. It is currently being registered for use throughout the world.

The commitment required to develop a vaccine is extensive. It takes typically ten years and upwards of \$500 million, and strict regulatory



Mark Lievonon, President of Aventis Pasteur in Canada. Aventis supplies modern vaccines to the world.

and compliance requirements must be met. "The technologies we use are increasingly complex and so are the targets, for example HIV and cancer," said Lievonon. "The whole revolution around understanding the human genome will be fundamentally important to the vaccine and the biopharmaceutical industry." In Canada, Aventis Pasteur reinvests almost 40 cents of every sales dollar into research and development. In 2000, this amounted to approximately \$68 million.

In fact, as its needs have grown, the company has also expanded its development capabilities in Toronto. They have recently added two new buildings for the manufacturing of five-component pertussis (including Pentacel) and Immucyst (for the treatment of superficial bladder cancer). Another new building will address quality control requirements, and further building and capital investments will be made as the need arises.

With respect to biotechnology, Lievonon believes that the opportunities to come will be truly transformational. "Right now, Ontario is very well positioned, but we have to do more," he said. "We have the infrastructure. We must try and grow it." Lievonon is working hard in this respect and serves as Chair of BIOTEC Canada, the organization that represents biotechnology across the country. He is also Chair of the Steering Committee for BIO 2002, a major conference to be held in Toronto in June 2002, where approximately 10,000 people from around the world will gather to discuss biotechnology.

Aventis Pasteur has developed partnerships with Ontario-based educational, hospital and research institutes to conduct research, development and clinical trials on vaccines. "Our goal is to quickly and successfully develop new products and bring them to market. We see ourselves as vaccine experts, and look at accessing other technologies, bringing them into our program and working together," said Lievonon. One of the most positive collaborations is the Cancer Vaccine Program, which is exploring the potential of boosting the power of the immune system to fight cancer.

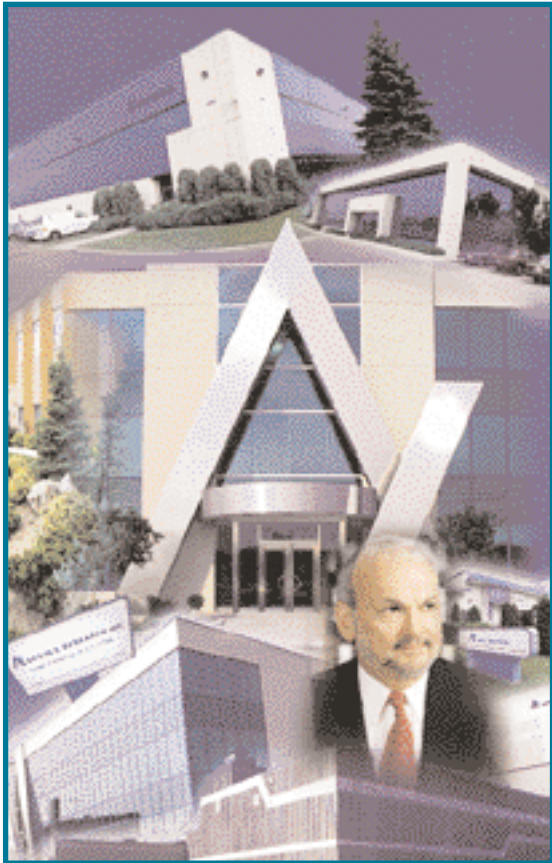
Aventis Pasteur has also worked in partnership with the government of Ontario, providing all of the flu vaccine for Ontario's recent \$38 million universal immunization program. "Ontario stated publicly that they were the first jurisdiction in North America to make the influenza vaccine available free to its residents. I actually believe they were the first jurisdiction in the world. We feel the program was successful, and we are gathering the data to determine its impact," said Lievonon. Vaccines are recognized as the most cost effective public health solution.

Currently, Aventis Pasteur supplies more than 1 billion doses each year, which immunize 400 million people in 160 countries around the world. The company also donates vaccines through Health Partners International to help people living in the world's poorest communities. It is working with other organizations to take the final steps in eradicating polio from the face of the earth.

When asked to sum up the success of his company, Lievonon cites several factors. "We have focused strictly on the field of vaccines, without springing into other areas. I would also point to our investment in research and development and manufacturing; our understanding of the need for partnership; our ability to develop win-win collaborations with those partners; and our ability to implement and be successful."

Aventis Pasteur will continue on this winning path and will continue to fulfill its commitment to finding better ways to protect life.

Apotex brings low-cost generic drugs to the world



Apotex facilities are located across Ontario; (inset) Apotex President and COO, Jack Kay.

For more than 25 years, Apotex Inc has focused on bringing generic pharmaceutical medicines to the world. From its first day with only two employees Apotex has grown to almost 4000 employees, including 1500 scientific staff. It is also the largest Canadian-owned pharmaceutical company, and one of the top 10 generic companies in the world.

"Our growth is due to several factors," said Jack Kay, President and Chief Operating Officer of Apotex Inc. "I would point to our strong commitment to research and development, the demand for low cost generic products, and the fact that when the business was founded there was compulsory licensing which favored competition in pharmaceuticals."

The generic pharmaceutical industry grew from the need to provide reliable, affordable medications to meet health care challenges. Generic drugs offer the same pharmaceutical benefit as brand name drugs at a lower cost. The cost is less

because the generic companies do not incur the initial research and development costs of brand companies. There is no difference in terms of product quality, purity, effectiveness or safety. "The science of generic drugs is already an old science," said Kay. "It is accepted around the world that if you do comparative biostudies, the body cannot distinguish between one brand and the other."

In Canada, drugs are the fastest rising component of health care. Last year, 287 million prescriptions were filled at a cost of \$9.5 billion. Of these, generics comprised 40 per cent of the volume at 14 per cent of the cost. Apotex products were used to fill more prescriptions than any other company. "Canada is our major market," said Kay. "As we expand internationally and develop joint ventures, it's all done on the basis that the manufacturing will be done in Canada." Apotex produces about 180 pharmaceuticals in approximately 450 dosages and formats, exporting to over 115 countries.

Apotex is predominantly an Ontario-based company with headquarters in Toronto. It occupies about 139,355 square metres of space in Richmond Hill, Etobicoke, Mississauga, Brantford, Windsor and Toronto, with additional operations across Canada. These facilities are home to many activities. The primary function of Apotex is researching, developing, manufacturing and distributing solid dosage pharmaceuticals. The company is also quite diversified, and produces alternative dosage forms (including injectables and aerosols), soft gelatin capsules (vitamins), fine chemicals and disposable plastics for medical use.

Bringing a generic product to market can take approximately five years and includes biostudies, formulation development and methodologies, and regulatory approvals. "We would not be where we are today if we had not invested heavily in research and development, and continued to reinvest profits back into R&D and facilities," said Kay. Apotex is one of the top 15 R&D spenders in Canada across all sectors.

It expects to invest \$110 million in R&D in 2001, representing close to 20 per cent of company sales. Research is in both generic and innovative pharmaceuticals, and more than 60 products are currently under development.

Apotex is very active in the growing area of biotechnology through its publicly traded company Cangene. Researchers at Cangene focus primarily on plasma and recombinant therapeutic products. A leading company product is WinRho SDF, a hyperimmune that is used for treatment of hemolytic disease of the newborn, and has worldwide approvals. "There is tremendous potential for the future of Cangene, and for Apotex, in terms of the growth of future biotechnology products."

Kay expresses concern about changes made federally to the Patent Act that include an extension of patents to 20 years from application. Generics cannot launch a product until brand patent expires. "We want to grow our company, but we also want to help save money in health care," said Kay. "The generic industry saves the Canadian health care system \$1 billion a year, and provides affordable medicines worldwide. This is important." When both generic and brand name products are available, the Ontario Drug Benefit program pays for the lowest cost interchangeable genetic drug product.

Three years ago, Apotex built one of the most technologically advanced pharmaceutical manufacturing facilities in the world in Toronto. "We can produce up to 10 billion tablets and capsules a year. During the next phase of expansion that will increase to 17 billion," said Kay. "If our business grows at the rate we want it to, we will invest another \$400 to \$500 million in facilities in Ontario."

In terms of working in Ontario, Kay cites advantages that include the employment pool, which he says is the best of any jurisdiction in Canada because a larger percentage of the pharma industry is located here, and the excellent access to clinicians through various universities.

For Kay, and Apotex, the goal is clear, "We want to build the most successful independent pharmaceutical company in the world."

Roche has put the “R” in R&D

For pharmaceutical manufacturers, the path from the research scientist in the lab to a doctor's prescription pad involves many steps. Among the most important are clinical research and clinical trials. For multi-national Hoffman La Roche (also known as Roche), its Canadian pharmaceutical division in Mississauga takes a lead role in this part of the process.

Celebrating its 70th anniversary in Canada this year, the company has a strong commitment to research and development, which recently saw it become one of the sponsors for Ontario's "Premier's Research and Excellence Awards". As its Executive Director for Public Affairs and Corporate Communications, Catherine Steele, explains, "We are big believers in research and we welcomed the opportunity to partner with government on this initiative."

In addition to the pharmaceutical division in Mississauga, Roche Canada also has a Vitamins and Fine Chemical division based in Cambridge. Between the two of them, the company employs more than 400 people in Ontario.

Roche is a leader in its field and manufactures many innovative new drugs. Five of the most prominent are Xenical®, a breakthrough in treatment for unhealthy weight and obesity; Tamiflu®, the first oral flu pill for all strains of influenza; Herceptin, the first genetic therapy for breast cancer; Rituxan, the first biotech product for non-Hodgkin's lymphoma; and Xeloda, the first oral chemotherapy.

One of the reasons for the company's strength in the industry may be the synergy between its pharmaceuticals and diagnostic products. As Steele says, "fusing the pharmaceutical and diagnostic is rare. If you look at other companies they are only or primarily pharmaceuticals. By bringing together diagnostics and pharmaceuticals, Roche is truly involved in predisposition, targeted screening, diagnosis, prevention, drug therapy and monitoring."

Another strength is in biotechnology. Roche recognized early on the importance of biotech to medicine. In 1990, it established a relationship with Genentech, one of the most successful pioneers in biotechnology in the United States. "The result of that decision has been better medicines. For example, our relationship with Genentech resulted in Roche bringing forward new genetic therapies for breast cancer (Herceptin) and non-Hodgkin's lymphoma (Rituxan). What makes these drugs unique is that they target the genes and cells where the disease exists as opposed to attacking the whole body in an attempt to get rid of the disease."

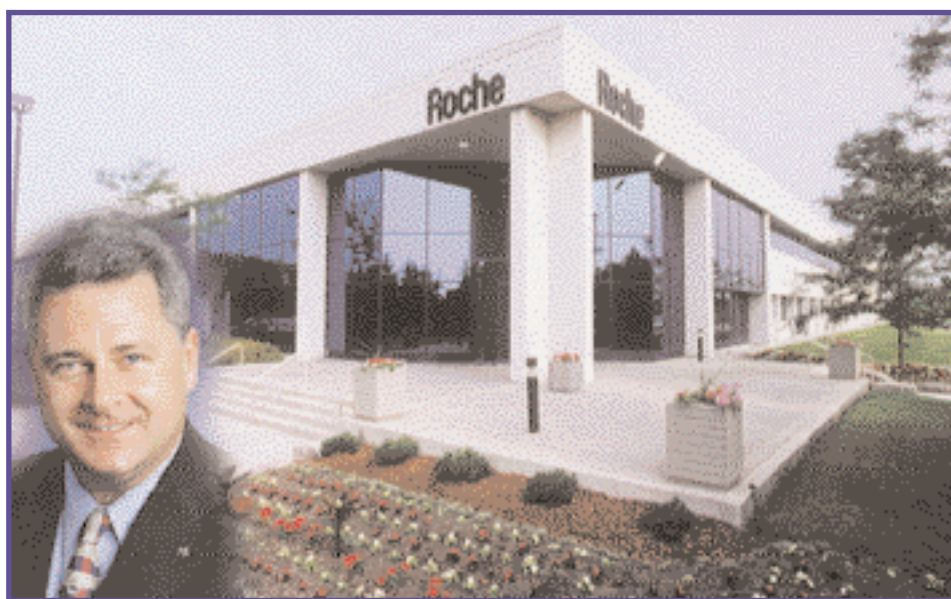
"Our philosophy as a company is to have targeted medicines, and through biotechnology we are better able to target the right drug to the right patient."

With the release of the flu pill Tamiflu, the company has embarked on a flu surveillance system involving roughly 250 physicians across Canada to track flu. As part of this project the company sponsors the "flu report" on the weather network, providing a service to alert Canadians that flu is in the area.

In keeping with its commitment to research, Roche Canada sponsors a number of programs across Ontario. These include the University of Toronto Industrial Pharmacy Residents Program; the Ottawa Heart Institute ACES program (Acute Coronary Extended Surveillance); and the Heart and Stroke Scientific Research Corporation of Canada fellowships, of which Roche Canada is the largest corporate donor, having invested more than \$500,000 in 12 cardiac fellowships between 1992 and 2000. Recently, the company announced a new three-year, \$175,000 commitment to the Heart and Stroke fellowships.

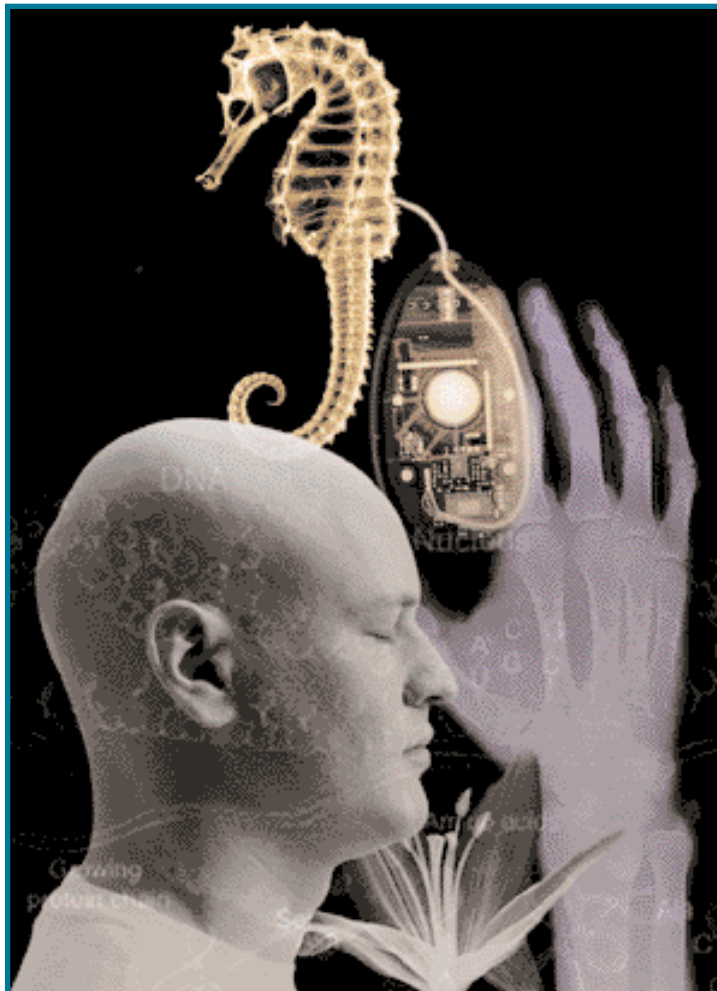
The company remains actively involved in the community, contributing almost \$5 million in 2000 through corporate philanthropy. This involvement has been recognized by a number of institutions including the Children's Hospital of Eastern Ontario, the Toronto Hospital, Erinoak Children's Centre in Mississauga, the Kidney Foundation of Canada and the Canadian Breast Cancer Foundation (CBCF).

In January 2001, *Report on Business Magazine* ranked Roche among the top 35 companies to work for in Canada.



Ronnie Miller, President and CEO of Hoffman La Roche Canada. Roche has a strong commitment to R&D.

Ottawa's biotechnology cluster soars



BioNorth 2001, Canada's International Biotech Conference (Conference image seen above) will take place in Ottawa, from November 5-7, 2001.

Ontario has developed regional biotechnology clusters around academic centres in Toronto, Ottawa, London, Guelph, Kingston and Hamilton. In Ottawa, the growth of biotechnology and the life sciences sector is the specific mandate of the Ottawa Life Sciences Council (OLSC).

The OLSC was created in 1994 following a strategic planning exercise within the former regional municipality of Ottawa-Carleton. It currently has a membership of 160 companies, individuals and organizations, and a network of approximately 4000 people with whom it works regularly.

"We saw the extent to which the high-tech industry took off in this region. Given the

huge amount of research and development activity that takes place, we felt that there was also enormous opportunity for growth in the area of life sciences," said Ken Lawless, Executive Director of the Ottawa Life Sciences Council. OLSC is positioned as a facilitator to this growth. It focuses on business development and helping to move forward both the research agenda and the commercialization agenda of the life sciences industry, which covers such fields as biotechnology, medical technology and health-related systems.

Currently, there are about 20 life sciences-

related research institutes and programs in Ottawa, and approximately \$370 million is spent on research in public institutions each year. About 11,000 people are employed in the industry in Ottawa, in both public and private sectors. "Biotechnology constitutes about one-third of the life sciences industry in Ottawa, although that component is growing as we begin to see more spin-offs, particularly on the biopharmaceutical side," said Lawless.

The industry produces between 10 and 12 new companies a year. One example is the World Heart Corporation. In 1996, the Corporation emerged from the University

of Ottawa Heart Institute to commercialize its leading edge technology, including the world's most advanced artificial heart. Today, it's a public company with more than 100 employees in Ottawa, and additional facilities in Oakland, California.

The government of Ontario has been a primary supporter of the growth of the biotech industry, encouraging increased competitiveness and new highly skilled jobs. In June 2000, Ottawa received \$5.4 million from the province to support the creation of the Ottawa Biotechnology Commercialization Centre. This incubation centre for start-up biotech firms will help move ideas from the lab to the market. OLSC is the project leader. "The incubators will help companies growing out of our research institutes get onto their feet," said Lawless. "The goal is to accelerate companies' growth and development and see them off in three or four years as a growing concern."

Lawless foresees increasing strength in the life sciences sector in Ottawa. A conservative estimate of the economic impact on the region is \$270 million over a 10 year period. "When we compare the curve of companies and activity to the high-tech sector in this region, we are following a similar growth pattern. We are now about where the high-tech industry was in 1986, but the quality of deals is equivalent to the early 1990s," said Lawless. "Because of the level of investment required, business cases are very solid and we are seeing very high quality companies with strong technology platforms."

"It really boils down to our overall competitiveness. Life sciences will be the next economic engine," says Lawless. "Ottawa is building on this. We have strong community support and great entrepreneurship. And the support of the Ontario government in terms of our commercialization agenda has been excellent. We take our hats off to the government for developing a life sciences agenda for this province."



BUSINESS BRIEFS



RCMP Constable Serge Lalonde escorts passengers boarding the inaugural flight to San Jose.

Air Canada knows the way to San Jose

Air Canada's inaugural flight #541 from Ottawa to San Jose, California, took off on March 5, carrying a full complement of leading business, government and industry representatives.

Bob Runciman, Ontario's Minister of Economic Development and Trade (MEDT) congratulated Air Canada for responding to the needs of Ottawa's high technology sector by scheduling the direct non-stop daily flight.

Runciman added that ease of travel is particularly important to industries whose key assets are human capital and intellectual property. "This direct flight builds on Ottawa's reputation as an important high tech centre," he said. "It also strengthens the economic links between Ottawa and Silicon Valley, two major players in the new economy."

"Last fall, former MEDT Minister Al Palladini wrote to Robert Milton, Air Canada's President and CEO, offering support for this direct flight," said Runciman. "Through the combined efforts of local and U.S. high tech companies, the federal government and the Ottawa Economic Development Corporation, this direct flight became a reality."

Catena Networks, a U.S.-based company with 250 employees located in Ottawa is particularly pleased. "I know I'll be logging a lot less time in airports waiting for connections," said Jim Hjartarson, Chairman of Catena. "This is a real plus for us doing business. It also brings us much closer to our major investors in Silicon Valley and should

encourage a flow of additional future investments into Ottawa."

Adam Chowaniec, CEO of Ottawa-based Tundra Semiconductor Corporation, and Chair of the Ottawa Economic Development Corporation, was among the passengers. He also finds this new daily service a boost to doing business. With facilities in California, the added bonus of flying direct adds precious time to his business calendar. "Importantly for Ottawa, this flight links us directly with the venture capital community in California that has been channeling hundreds of millions of dollars into ventures in the city in recent years," said Chowaniec.

The inaugural event was an auspicious start to forging future business relationships.

CRS Robotics – It's about time

It sounds like a scene out of Star Wars. Human scale robots and advanced automated processes that can out-perform mere mortals in various high tech tasks.

But, Ralph Steedman, President and CEO of CRS Robotics in Burlington, notes that the concept of mechanical robots has been around since the 1960s and 1970s. "Advanced manufacturing, especially automotive, embraced [the concept] initially, but the Life Sciences area has really opened up only in the last five years," said Steedman.

CRS Robotics manufactures high-end laboratory integration hardware and proprietary software for motion control devices like robots and workstations. Their complex automated processes are used primarily in Life Sciences applications. This includes: DNA purification systems, geno-typing, protein expression and drug screening in biotechnology and pharmaceuticals industries. CRS develops and manufactures automated workstations complete with articulated robots and peripheral devices that search for drugs or identifying genes. Gene identification will be a growth area for CRS,



**Ralph Steedman,
President and CEO
of CRS Robotics.**

building on the human genome project initiated within the last 18 months.

The advantages of using human scale robotics are significant. Customers require flexibility, speed, reliability and cost-effectiveness, and the robots perform repetitive tasks, often for extended periods of time. "There's a tremendous amount of data and information to go through. It's like finding a needle in a haystack sometimes," says Steedman. "An automated process is quicker, more reliable. It's repeatable and can run 24 hours-a-day if required. We try to reduce the cycle times it takes our customers to find new drugs or medications and get to market. If our customers can get to market one year earlier, it means millions of dollars to them."

CRS Robotics is constantly developing new and better software and hardware to accommodate the accelerated growth in the Life Sciences field. Its 135 highly-educated, highly-trained employees include biologists and biochemists, electrical and mechanical engineers, and software developers.

"We're in an industry that's adding people. Our workforce will increase by about 25 per cent this year. We're also going to be increasing the size of our manufacturing capability in Burlington, to handle anticipated growth rates in our business," said Steedman.

In an industry that relies on research and development, Steedman sees the next generation of human scale robots being developed and used in medical surgery and operations where important R&D strides are being made. Whether they are the big pharmas or small biotechs, he is impressed with the accomplishments of all his customers. "All our clients are dream clients. What a small biotech company is trying to accomplish in its studies, with the use of our applications, is really amazing."

Twenty years ago, CRS Robotics was competing with Japanese technology. Now the tables have turned. "In the areas we're in now we really don't see any competition from the Far East especially in lab automation. In robotics, yes, there are some very large Japanese competitors. But, they're not selling into the same market as we are. Small payload robots have been our specialty."

Chinese Canadian Entrepreneur Awards 2001

If Edmon Chung has his way, Asian Canadians will not be dependent on the use of English to navigate the Internet.

Chung, 25, President and Chief Creative Officer of Neteka Inc., has developed software that will allow people all over the world to surf the net by using Web and e-mail addresses in their native languages.

For his efforts, Chung was honoured with the Most Innovative Award at the 2001 Chinese Canadian Entrepreneur Awards.

"A generation ago, Chinese were fighting to be accepted into Canadian society," an excited Chung said. "Now we are facing a fight for online acceptance on the Internet. Right now the Internet is Anglocentric. Shortly you will be able to register a Chinese e-mail address and domain name with Chinese characters."

Chung and his five partners spent three years developing the software that will register a variety of languages besides English.

Neteka received support and advice from the University of Toronto's Innovations Foundation, a technology transfer company at U of T that helps researchers patent, market, license and start up businesses. It obtained the



Edmon Chung, President of Neteka Inc. receives his award from Josette Wolf of IBM Canada.

bulk of its funding, \$1-million of venture capital, from Quorum Funding Corporation, fund manager for the Ontario Ministry of Economic Development & Trade's Small- and Medium-Sized Enterprise (SME) Fund established through the Federal Immigrant Investor Program.

The idea came when Chung tried unsuccessfully to search on the Internet for a Hong Kong company whose name was in Chinese characters. One of his partners had already developed a Chinese search engine that was then adapted to meet the needs of the Neteka product.

"Our business model is based on a small charge per domain name," said Chung, who is named for his birthplace, Edmonton. "We have a potential for hundreds of millions of dollars or more."

Currently, Neteka employs nine full-time staff and another five-to-seven contract workers. Chung hopes that the next round of financing, which will go mainly towards marketing his software, will bring the number of staff to 30 by the end of 2001.

Chung wasn't the only successful entrepreneur to earn kudos from the Association of Chinese Canadian Entrepreneurs (ACCE). Rita Tsang, owner of Tour East Holidays (Canada) Inc. was awarded Entrepreneur of the Year 2001 for her thriving travel agency specializing in Far Eastern vacations.

Starting from a small shop in the late '70s, Tsang now has two branches in Scarborough and another in New York City. Tsang's business has gross sales of over \$100 million annually and does wholesale business with over 4,000 travel agencies as well as countless direct sales to consumers.

Other winners included:

- Best Startup Award: Winnie Tang, creator of Fashion Design Group, specializing in the manufacturing of wedding gowns as well as bridesmaid, prom and special occasion dresses.
- Most Improved Award: Stephen Sham, Chairman and CEO of Medmira Inc. for his medical biotechnology company that went public in 2000 on the Canadian Venture Exchange.
- Best Community Service Award: You Lian Peng, owner of Twin Dragons Restaurant in Thunder Bay, for his irrepressible community spirit in promoting Thunder Bay.
- Honourable Mention Award: Ellen Pun, owner of Ellen's Health Food Ltd., which supplies a majority of meals in hospitals and nursing homes around the GTA.

Guest speaker Ed Mirvish, President and CEO of Honest Ed's Ltd. and the prototypical Canadian entrepreneur, was awarded a special plaque of appreciation by the ACCE. The 86-year-old restaurateur, impresario and proprietor jokingly explained the secret of his marketing success: "When things went right I told the world. When things went wrong, I didn't say a word."

THE ONTARIO BUSINESS REPORT

Ministry of Economic Development and Trade
Communications and Public Affairs Branch
Eighth Floor, Hearst Block
900 Bay Street
Toronto, Ontario, Canada M7A 2E1

Telephone: (416) 325-6666
Facsimile: (416) 325-6688

Minister: Hon. Bob Runciman
Deputy Minister: Barbara Miller

Editor: Dale Lubitz
e-mail: ontariobusiness.program@edt.gov.on.ca

Electronic versions of The Ontario Business Report can be found on the Ontario, Canada Web site www.ontario-canada.com.

The focus of this newsletter is on business – successes, news, trends, opportunities, challenges and issues affecting Ontario's business climate. Information is drawn from ministries and agencies across government and from other public sources believed to be reliable. All efforts are made to ensure timeliness and accuracy.

La version française du Ontario Business Report est disponible sous le titre Cahier des affaires de l'Ontario.

We want to hear from you.

Comments and contributions are welcomed. Please write us by mail, fax or e-mail.





We want to hear from you!

Change of name and address information.

Affix the current mailing label below, and indicate any change so that we may update our records

or/ provide your correct name and mailing address below.

Current Mailing Information:

New Mailing Information:

Name	
Company Name	
Position	
Address	
City	Province
Postal Code	Telephone
Fax	e-mail

Tell us what you think of the Ontario Business Report

If we can make the Ontario Business Report (OBR) more interesting and useful to you, please tell us. Your input is greatly appreciated. We may use your comments in a future edition.

☐ Yes, please use my comments in the OBR.

Signature

Do you know anyone else who should receive the Ontario Business Report?

Name	
Company Name	
Position	
Address	
City	Province
Postal Code	Telephone
Fax	e-mail

Fax back to: Dale Lubitz, Editor
(416) 325•6688 or
e-mail at: dale.lubitz@edt.gov.on.ca

Or mail to: Dale Lubitz, Editor OBR
Communications and Public Affairs Branch
Ministry of Economic Development and Trade
8th Floor, Hearst Block, 900 Bay Street
Toronto, Ontario M7A 2E1

Important Notice: We are currently updating our subscriber mailing list. If you do not receive the June edition please send us a FaxBack so that we can return your name to the list. Thank you for your assistance.