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INNOVATION IN MANUFACTURING PROJECT UPDATE

The Planning and Economic Development Committee recommends the adoption of the recommendation contained in the following report dated January 19, 2012, from the Executive Director, Office of the Chief Administrative Officer.

1. RECOMMENDATION

It is recommended that:

1. Economic Strategy staff circulate this report and the "Innovate York: Guide for York Region Manufacturers" to the Ministry of Training, Colleges and Universities, the local municipal Economic Development Offices, board of trade and chambers of commerce, the Advisory Panel, manufacturing associations and interested stakeholders and businesses that are involved in the project.

2. PURPOSE

This report provides an update on the Innovation in Manufacturing project and recommends distribution of the report and accompanying guide to stakeholders.

3. BACKGROUND

The manufacturing sector remains a major component of the diversified York Region economy

The manufacturing sector continues as a major component of the York Region economy, representing 15.5% of jobs in the Region in 2011. As global competition intensifies, a new model for innovation is required to allow York companies to continue to compete in the networked and knowledge intense economy. To develop the model, the Innovation in Manufacturing project studies and recommends ways York Region's manufacturing sector can innovate to ensure sustainability and growth.

The purpose of the Innovation in Manufacturing project is to help revitalize the manufacturing sector by identifying opportunities and creating tools for York Region companies. The intent is to lay the essential groundwork to encourage new and sustained manufacturing investment at the local level.

Council has proactively approved several previous actions that form the background of the Innovation in Manufacturing Project

The process for developing support for manufacturing in York Region began with a Council approved Industry Cluster work plan in March 2008. Council has subsequently undertaken several key actions stemming from this plan, including a manufacturer's survey and several manufacturer's symposiums, the results of which have served to set a path for constructive action.

Successful manufacturers invest in research and development, sell outside the Region, and secure government assistance to grow

A manufacturing sector survey was delivered by Ipsos Reid in fall 2009 in which 301 interviews of York Region manufacturers were conducted on 92 key performance indicators. The report on Manufacturing Sector Survey Results and the Ipsos Reid Study publication were presented to Council December 16, 2009. The key conclusions were that manufacturers that are most likely to succeed:

- Invest in research and development (R&D)
- Sell products nationally and internationally
- Secure government financing

Industry suggests governments can assist manufacturers by providing leadership, a competitive edge, and a clear message about opportunities

Manufacturing Sector Symposiums were held in March 2010 and October 2010 attracting close to 200 representatives from industry, academia, and various agencies and associations. The symposium resulted in a recommendation that all levels of government, federal, provincial and municipal work with the manufacturing community and partners to develop an Innovation in Manufacturing Project that will:

- Provide vision and leadership for the future
- Positively and competitively differentiate York Region manufacturers
- Communicate a clear message that York Region is the place to build and grow innovative manufacturing-based enterprises

Some key needs identified by manufacturers through the symposiums include:

- Uncovering government funding resources for technical support, research and development, skilled worker training
- Articulating knowledge about provincial, regional, industry-academic collaboration programs that assist entrepreneurs to bring new ideas to the marketplace, provide network opportunities for sharing expertise, support to access global markets, services to increase productivity and competitive enterprises
- Delivering an electronic mapping feature to locate and identify York Region businesses

Funding of $249,997 was secured from Employment Ontario

Funding for the Innovation in Manufacturing Project was issued through the *Articles of Agreement* on December 21, 2010 between Her Majesty the Queen in right of Ontario, as represented by the Minister of Training, Colleges and Universities and the Regional Municipality of York in the amount of $249,997 for the project duration of January 1, 2011 to December 31, 2011. Staff requested and received an amending agreement with the Ministry of Training, Colleges and Universities to extend the project beyond December 31, 2011 to March 31, 2012. The purpose of the extension is to allow for the administrative wrap-up of the project, with all other aspects of the agreement and deliverables remaining unchanged.

The project includes four key deliverables:

- Undertaking of research on several manufacturing sub-sectors with growth potential in York Region
- Delivery of business events, including the MedEDGE Summit and the Innovate in York Manufacturing Conference, to bring industry together to raise issue awareness, share knowledge and generate ideas
- Development of tools to provide support to manufacturers looking to innovate, including a printed guide for manufacturers *(See Attachment 1)* and an on-line resource tool that includes a digital version of the guide and an interactive business matching component
- Initiation of a consortium of manufacturers to share best practices and promote innovative collaborations

While the project is concluding, the results and tools developed will be embedded in Regional action plans and programs.

4. ANALYSIS AND OPTIONS

In the global economy, knowledge, research and innovation drive economic growth. Our economic competitiveness to 2051 depends on innovation. The Innovation in Manufacturing project is helping to create the environment to elevate York Region's reputation for innovation in manufacturing excellence.

Innovation begins with ideas, and the ideas need to be transformed into useful commercial and social outcomes. The process, actions and outcomes to progress the innovation agenda are exhibited in *Table 1*.

Table 1
Deliverables: Stages, Actions and Outcomes

Phase	Actions	Outcomes
1: Mobilize	Engage Advisory Panel, agree to terms of reference and milestones to articulate vision and high level goals	Industry Advisory Panel COMPLETED
2: Research	Gather data to position the Region's manufacturing sector	Research framework COMPLETED
	Literature review to explore two manufacturing sub-sectors focusing on analyzing strengths, weaknesses, opportunities and threats (SWOT)	Sub-sector focus report on Food Processing and Life Sciences COMPLETED
3: Event Engagement	Develop and deliver MedEDGE 2011 in partnership with Town of Richmond Hill and ventureLAB	Life sciences discussions with hospitals and 200 stakeholders COMPLETED
	Focus groups, Productivity & Profit for Innovation, to determine validity of exploratory research findings	Feedback from 66 organizations COMPLETED
	Manufacturing Conference	Deliver to 260 attendees COMPLETED
4: Tools	Mapping tool in collaboration with Geomatics	Development and delivery in Q1-2012
	Consolidate primary and secondary research from processes 1 though 3 and develop report	Guide for Manufacturers Report to be released in January 2012

Work has been completed in Phases 1 through 4 as follows:

PHASE 1: MOBILIZE – IDENTIFY AND ENGAGE STAKEHOLDERS

An Advisory Panel was formed to discuss project milestones. Panel members included six manufacturers and innovation stakeholders as shown in *Table 2*, in addition to Economic Strategy staff.

Table 2
External Industry Advisory Panel Members

Name	Organization
Jill Anderson	Aecometric Corporation /Conamara Limited
Vern Cunningham	Alutron Modules
Steven Coates	Better Motion Group and Faurecia Automotive
Diana Harper	Employment Ontario (EO)
Kevin McCormick	Excellence in Manufacturing Consortium (EMC)
Dan Lynch	Innovation York
Mark Baistrocchi	KAMM Industries Ltd.
Thomas Lorini	Novatec Machining Inc.
Jose Costa	Ontario Centres for Excellence (OCE)
Michael McNamara	Seneca College, Office of Research and Innovation
Jeremy Laurin	ventureLAB
Al Wilson	Workforce Planning & Adjustment Board
Lawrence Cotton	York Catholic District School Board

PHASE 2: RESEARCH ON FOOD PROCESSING AND LIFE SCIENCES

Two manufacturing sectors identified for analysis as per the agreed upon project deliverables. The food processing and life sciences sub-sectors were reviewed for trends, strengths, weaknesses, opportunities and threats (SWOT) and benchmarking. This work was conducted by an external consultant, and the results of this work have been incorporated into the draft guide.

Food processing facilities may see a growth opportunity in the eat local and nutrient enhanced food trends

The Food processing industry is the third largest segment of the total manufacturing industry in Ontario and the subsector's multiplier effect generates growth in related industries. The sector experienced declines in 2008-2011 sustained predominantly by small (one to four employee range) businesses. Niche markets and the growing multi-cultural communities position the Region favourably for the 'Eat Local' growth trend. The integration of agri-food industry with medical biotechnology and life sciences to develop innovative nutrient fortified foods and supplements is identified as a growth opportunity. However, the limited availability of food grade facilities in York Region and major capital investments required to expand facilities is a threat to growth.

Life Science subsector growth linked to technology hub

York Region as a technology hub is well positioned to attract the life sciences manufacturing sector in subsectors where Information and Communication Technology (ICT) is driving new product and process development. Research and comments from

opinion leaders and speakers at MedEdge Summit in Phase 3 below supports the research findings.

PHASE 3: EVENTS HELD TO ENGAGE MANUFACTURERS AND STAKEHOLDERS

Several events have been undertaken throughout the project to bring industry together to identify and raise issue awareness and generate ideas and feedback around best practice and appropriate support tools.

MedEDGE Life Science Summit links researchers to manufacturers

As part of this project medical device manufacturers were brought together at the MedEDGE Summit 2011, held on June 16, 2011. The event was organized in partnership with the Town of Richmond Hill and ventureLAB. Over 200 participants learned about exciting new technological innovations, partnering and funding opportunities and fibre optic network advances impacting researchers in health care information and communications technology (ICT).

MedEDGE summit spins off additional life sciences initiatives

Following the summit, two York Region-based initiatives were launched to further innovation on medical device research and funding. In the first instance, Ontario Centres for Excellence (OCE) and ventureLAB issued a competitive Call for Proposals to support partnerships between companies and Ontario post-secondary institutions in the medical devices and life sciences sectors. The Call for Proposals yielded sixteen expressions of interest. In the second instance, Southlake Regional Health Centre is planning an Expo to increase collaboration between health technology innovators and clinicians to showcase products, explore research and testing partnerships and provide a forum to assess unmet needs for further development. York Region, the chambers and municipalities are active participants in both initiatives.

Productivity and Profit through Innovation Seminars for Manufacturers

Economic Strategy Branch delivered a series of five focus group sessions during October throughout the Region and in partnership with municipal offices, Chambers of Commerce and Board of Trade and ventureLAB. Feedback was elicited from manufacturers on proposed tool and resource development.

Feedback from the “Productivity and Profit through Innovation Seminars for Manufacturers” was used to shape the resources included in the Guide, “Innovate York: Guide for York Region Manufacturers”, *Attachment 1*.

Innovate in York: Manufacturing Conference

The Innovate in York: Manufacturing Conference was co-hosted by the City of Vaughan on December 6, 2011. Over 260 manufacturers and stakeholders had the opportunity to meet the York Region manufacturing value-chain and innovation ecosystem partners from York Region and beyond. The keynote speaker, Idris Mootee, highlighted that innovation is more than just about technology, and discussed how companies need to adopt innovative thinking into all aspects of their business. The manufacturing panel highlighted the challenges of innovation from successful York Region manufacturers. The panel included executives from Alutron Modules Inc., SMTC Corporation, Vecture Inc., ventureLAB, and Seneca College's Faculty of Applied Sciences and Engineering Technology. Their stories reflect how being innovative in process and product development leads to business growth and the ability to expand into new markets and business lines.

Through discussion and feedback from the "Productivity and Profit through Innovation" series, manufacturers expressed the need to learn about developing alliances with research agencies. The Innovation Resources Panel discussed how manufacturers can tap into the York Region innovation ecosystem. Speakers included experts from the Centres of Excellence, Mitacs, the NRC-Industrial Research Council, the National Angel Capital Organization, and SR&ED tax credits available to manufacturers.

PHASE 4: TOOLS TO SUPPORT INNOVATION

Outcomes of the project include the development of tools to provide support to manufacturers looking to innovate. These include a printed guide for manufacturers and an online resource tool that includes a digital version of the guide and an interactive business matching component. These tools are critical pieces designed to develop a blueprint for the development of a York Region manufacturing sector innovation ecosystem.

Innovate York: Guide for York Region Manufacturers

The resources and panel feedback has been consolidated into "Innovate York: Guide for York Region Manufacturers." *See Attachment 1*. The guide presents a range of resources for local manufacturers, including the support structures in place to encourage expansion of operations in York Region, research partnerships and methodologies to source a skilled workforce. The guide was discussed with stakeholders at the December 6, 2011 manufacturing conference in Vaughan and will be released in February 2012.

Manufacturers Mapping Tool

The remaining deliverable to be developed and completed in Q1-2012 is the first phase of a mapping tool in collaboration with the Geomatics Branch. The tool will enable manufacturers to find local partners and product enhancements to encourage innovation

in York Region, starting with several key York Region manufacturing sub-sectors in Life Sciences and Food Processing as the first phase. Delivery of a draft tool is expected by March 2012.

Industry-driven manufacturers consortium being formed to help companies connect and innovate

A significant outcome of the work is the establishment of a core group of manufacturing stakeholders that will continue to work with York Region to identify and connect potential partnerships. Significant interest has been identified amongst several stakeholders to help develop and drive this 'consortium' of manufacturers. The consortium is intended to be an industry-driven initiative that serves as a more formal access point for those seeking to connect and innovate. The tools resulting from this project will support the consortium and assist partners from industry, academia and government to create linkages and networks that promote business growth.

Link to Key Council-approved Plans

The work aligns with the 2011 to 2015 Strategic Plan section "Increasing the Economic Vitality of the Region" by positioning York Region as the "Region of Choice" for businesses in the innovative manufacturing sector thereby increasing employment opportunities for residents of York Region. Manufacturing will contribute to Regional Official Plan's employment growth of 280,000 jobs by 2031 and aligns with local municipal plans to develop strong local economies offering residents opportunities for employment. The outcomes will be integrated into the Economic Development Action Plan in 2012.

5. FINANCIAL IMPLICATIONS

There are no financial implications of this report. The $249,997 project cost is fully funded from the Ministry of Training, Colleges and Universities.

6. LOCAL MUNICIPAL IMPACT

Manufacturing is a critical component of the Regional and local economies. Due to the importance of developing the manufacturing sector in each local municipality, staff partnered with local economic development offices to identify high potential manufacturers to participate throughout the Innovation in Manufacturing Project.

7. CONCLUSION

The Innovation in Manufacturing project was undertaken to help manufacturers in York Region innovate and compete globally.

The York Region municipalities and their manufacturing businesses share important common goals: to retain and create jobs and to foster a more innovative and prosperous business climate. Region-wide stakeholder input was secured to ensure that the needs of the business community were fully reflected in the outcome.

The deliverables outlined in this report support York Region's commitment to growth. The project engaged local manufacturing businesses to seize growth and expansion opportunities to adopt capacity by sharing information and ideas and forming new linkages and networks within the business community. These linkages are essential to foster conditions where manufacturing innovation can thrive.

Innovation begins with ideas, and the ideas need to be transformed into useful commercial and social outcomes. An innovation ecosystem model encompasses more than knowledge inputs and incorporates all relevant factors and stakeholders that generate value to customers. A highly evolved innovation ecosystem enables participants to work across enterprise boundaries, focus on customer value creation, respond quickly to shifts in-market demand, accelerate the transition from research to production and be more adaptive to change. Innovation ecosystems build a collaborative advantage, a strategic asset for growth and profitability in the years ahead.

Tools developed such as the "Innovate York: Guide for York Region Manufacturers" are critical pieces designed to develop a blueprint for the development of a York Region manufacturing sector innovation ecosystem. These tools are intended to support an industry-driven consortium initiative to help industry participants connect and innovate.

For more information on this report, please contact Doug Lindeblom, Director, Economic Strategy at Ext. 1503.

The Senior Management Group has reviewed this report.

(The Council attachment referred to in this clause was included in agenda for the February 1, 2012 Committee meeting.)

Council Attachment 1

INVEST IN YORK
CANADA'S BUSINESS GATEWAY

Innovate York

Guide for York Region Manufacturers

York Region

EMPLOYMENT ONTARIO
Your job is out there. We'll help you find it.

INVESTINYORK.CA

Mayor
Frank Scarpitti
Town of Markham

Regional Councillor
Jack Heath
Town of Markham

Regional Councillor
Jim Jones
Town of Markham

Regional Councillor
Gordon Landon
Town of Markham

Regional Councillor
Joe Li
Town of Markham

Mayor
David Barrow
Town of Richmond Hill

Mayor
Maurizio Bevilacqua
City of Vaughan

Chairman and CEO
Bill Fisch

Regional Councillor
Vito Spatafora
Town of Richmond Hill

Regional Councillor
Gino Rosati
City of Vaughan

A Message from York Regional Council

Innovate York: Guide for York Region Manufacturers was created as a result of discussions with manufacturers, who indicated they need to form new linkages and partnerships in order to take advantage of innovative opportunities. Sharing strengths in a partnership would enable the parties to build their capacity, raise their competiveness and increase productivity and profit.

Similarly, being innovative requires sharing information and new methodologies with other businesses within an industry cluster. Suppliers and competitors alike tend to locate close to one another, creating a cooperative business environment or ecosystem where members thrive. This enables members to access and adopt new technologies and attract innovative people with unique skill sets to help exploit advantages.

This guide presents a range of resources for local manufacturers, including the support structures in place to encourage growth and expansion of operations in York Region. It discusses research partnerships and resources such as ventureLAB, the York Region partner in Ontario's Network of Excellence, where entrepreneurs get help bringing their technology to market. This guide also shows alliances how to access financial mechanisms to fund innovative products and processes.

York Regional Council is dedicated to fostering an innovation ecosystem that enables local manufacturing to retain and create jobs and contribute to the continued development of a productive and prosperous business climate.

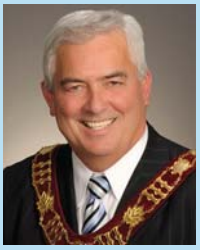
Regional Councillor
Brenda Hogg
Town of Richmond Hill

Regional Councillor
Michael Di Biase
City of Vaughan

Mayor
Tony Van Bynen
Town of Newmarket

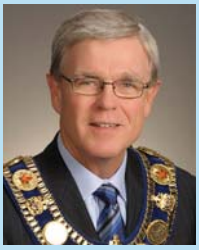
Regional Councillor
Deb Schulte
City of Vaughan

Regional Councillor
John Taylor
Town of Newmarket



Mayor
Robert Grossi
Town of Georgina

Regional Councillor
Danny Wheeler
Town of Georgina



Mayor
Geoffrey Dawe
Town of Aurora

Mayor
Virginia Hackson
Town of East Gwillimbury

Mayor
Steve Pellegrini
Township of King

Mayor
Wayne Emmerson
Town of Whitchurch-Stouffville

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Download the Innovate York: Guide for York Region Manufacturers at www.investinyork.ca.
The online version provides easy access to links contained in this document, and will be updated.

I. York Region Innovation in Manufacturing Partnerships

Leveraging publicly funded assets reduces costs associated with research and development (R&D). Below are examples of York Region's innovation ecosystem for manufacturers.

Ontario Centres of Excellence (OCE)

Ontario Centres of Excellence

Ontario Centres of Excellence (OCE) can help with industrial research and development, commercialization of technology, and access to knowledge from industry and academic communities in Ontario.

- **OCE Commercialization Programs** bridge financing to help move your research results to a marketable product or service.
- **OCE Research Programs** can help businesses tap into the research expertise of Ontario's universities, colleges and hospitals.
- **OCE Talent Program** helps connect researchers with employers and entrepreneurship. Graduate research students can be hired and next-generation researchers interested in entrepreneurship can speak to OCE.

OCE is a member of the Innovation in Manufacturing Project Advisory Panel and presented at the "Productivity and Profit" seminars held in October 2011. To view the presentation visit www.investinyork.ca.

Ontario Network of Excellence (ONE) and ventureLAB, York Region's connection to the ONE network

ontario network of excellence

Ontario Network of Excellence (ONE) is a collaborative network of organizations across Ontario that specializes in commercialization, and includes a diverse set of stakeholders like experienced entrepreneurs, tech-savvy business advisors, angel and venture investors, sector-specific organizations, and colleges and universities. ONE is designed to connect businesses with services and programs to innovate and commercialize ideas, and gain a competitive advantage in the market place, ventureLAB is York Region's contact to the ONE network.

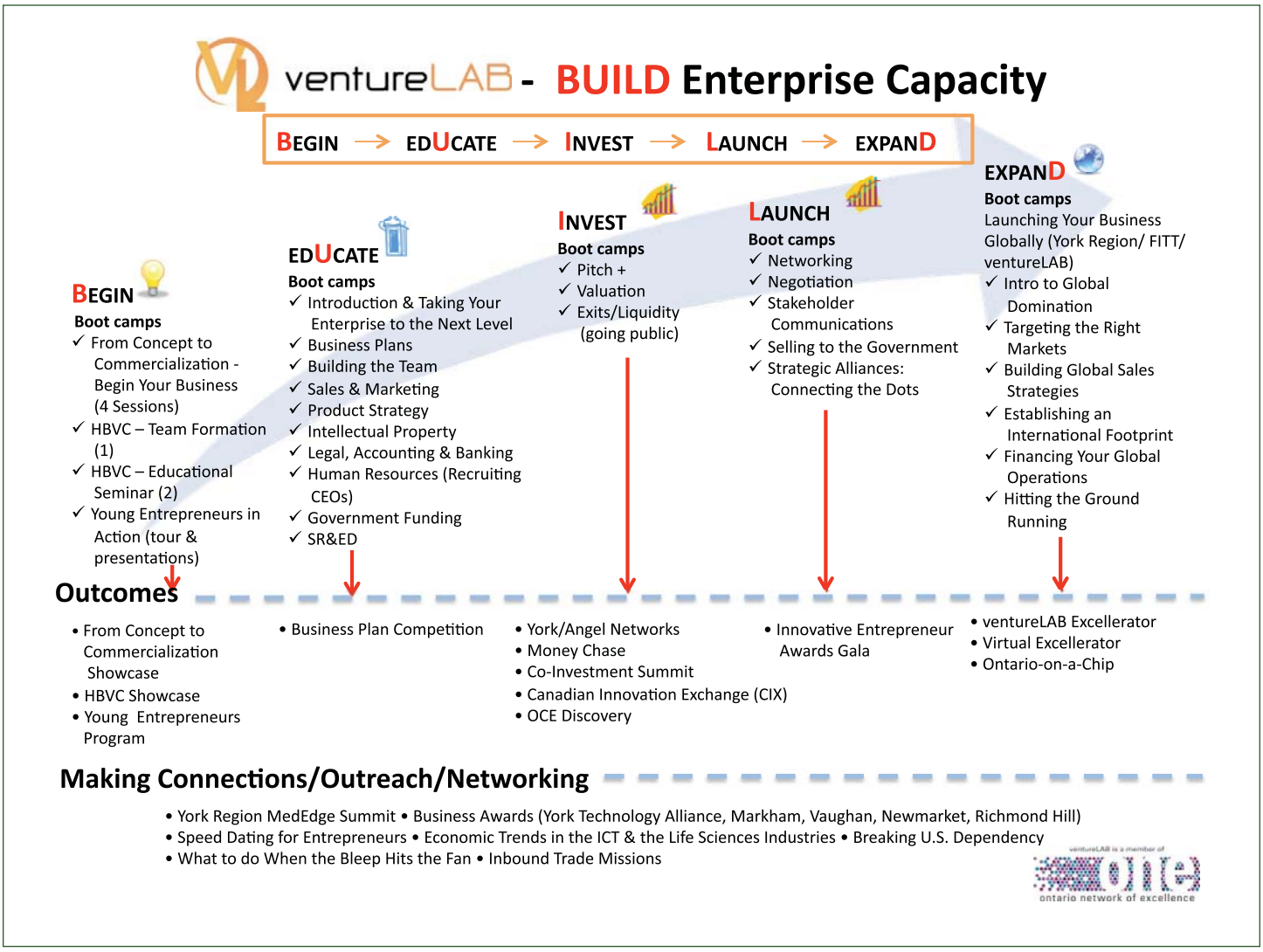
ventureLAB

ventureLAB is York Region's innovation centre, one of a collaborative network of organizations across Ontario, designed to help you commercialize your ideas. ventureLAB is housed in the Markham Convergence Centre. The Ontario Network of Excellence (ONE) is a province-wide team of member organizations with commercialization experts which include:

- Experienced entrepreneurs
- Tech-savvy advisors
- Investors
- Sector-specific organizations
- Colleges and universities

In the Regional Municipality of York, ventureLAB serves as your conduit to ONE network and has representation on the Innovation in Manufacturing Panel Advisory Board (www.ventureLAB.ca).

Business are afforded the ventureLAB **BUILD** capacity though **Begin**, **EdUcate**, **Invest**, **Launch** and **ExpanD**. See the graphic depiction below.



Academic Network

In addition to academia located within the boundaries of York Region, the Economic Strategy Branch of The Regional Municipality of York collaborates with academic institutions and think-tanks in Ontario, nationally and globally. For purposes of this guide, institutions with operations in the geographic boundary of York Region are included.

Seneca College

The 905 area, which includes York Region, will be the fastest growing area in Ontario to 2021. Seneca's full-time enrolment numbers reflect this trend, with a more than 14 per cent increase. Seneca has 10 campuses (5 in York Region and 5 in Toronto).

Seneca has plans to expand in order to meet student demand over the next 10 years and beyond. In June 2011, it was announced that Seneca will receive $43 million from the provincial government to revitalize current buildings and expand community safety and health services training at its King City campus while creating classroom space for an additional 1,450 students. There is also potential for further growth at Seneca's Markham campus.

Seneca College has representation on the Innovation in Manufacturing Advisory Panel. Seneca College, in collaboration with partners in industry and manufacturing, will create a new senior research position on its campus: The Industrial Research Chair in Manufacturing. This new Research Chair, funded by the Natural Sciences and Engineering Research Council of Canada (NSERC), will serve as a dedicated resource and catalyst for the Innovation in Manufacturing Consortium for the York Region. It will work in areas of applied research that are of direct relevance to the local manufacturing community such as the adoption of emerging or enhanced technology solutions for product and process improvements and prototype development.

Manufacturers are invited to join the consortium and participate in the program, for further information, contact Michael McNamara, Dean, Research & Scholarship, Seneca College, Office of Research and Innovation at (416) 491 5050, ext. 7904 or michael.mcnamara@seneca.on.ca

York Catholic District School Board

The York Catholic District School Board (YCDSB) serves one of the fastest growing areas in North America: the Regional Municipality of York. The York Catholic District School Board has schools in each of the Region's nine area municipalities: Aurora, East Gwillimbury, Georgina, Markham, Newmarket, Richmond Hill, Vaughan, Whitchurch-Stouffville, and the Township of King.

Currently, York Catholic District School Board has 86 elementary schools and 15 secondary schools, with new schools opening yearly, with more than 55,000 students served by more than 5,000 dedicated instructional staff members.

York Catholic District School Board delivers a "school-to-careers" program, offering every student attending a secondary school in the York Catholic District School Board the opportunity to be involved in the Ontario Youth Apprenticeship Program (OYAP). Students are able to explore exciting careers in apprenticeship occupations through the Cooperative Education program. Students have an opportunity to become registered apprentices and work towards becoming a certified journeyperson in a skilled trade while completing their secondary school diploma. The York Catholic District School Board has representation on the Innovation in Manufacturing Advisory Panel.

York Region District School Board

York Region District School Board (YRDSB) is the third largest school district in Ontario, with over 117,000 students in 166 elementary schools and 31 secondary schools. York Region students consistently perform above average in provincial testing and the Board is one of the top achievers in Ontario. York Region District School Board believes this is due to a unique combination of students who are prepared and motivated to succeed,

teachers who are skilled at helping students learn, strong educational leaders who subscribe to a common vision of excellence, and a supportive community that understands the importance of quality public education. All nine municipalities are served by York Region District School Board. York Region District School Board has representation on the Innovation in Manufacturing Panel Advisory Board.

York University

York University was founded in March 1959, and is now Canada's third-largest university and its leading interdisciplinary research and teaching institution. York has established its reputation worldwide with 280 partnerships with international universities, attracting international students with roots tracing back to 155 countries.

Expansion plans for manufacturers to utilize include research and development in new $70 million life sciences building which will have a focus on biologics and biochemistry and cancer research and the $50 million engineering building.

The new 160,000-square-foot life sciences building includes classrooms, offices, laboratories and research space to support increased enrolments in high-demand science and health-related disciplines, such as biology, chemistry, biochemistry and kinesiology. Creating spaces for graduate and undergraduate students, the Life Sciences Centre will also house specialized facilities, such as nuclear magnetic resonance (NMR), X-ray, mass spectrometry and radioisotope laboratories.

The project received federal and provincial funding totalling $70 million through the Knowledge Infrastructure Program (KIP) and Ontario's 2009 Budget.

Ontario committed $50 million for new engineering building at York in June 2011. This initiative provides with the opportunity to train future innovators who will develop solutions for growing challenges. Engineering has been featured in academic plans since the University was founded in 1959. The investment paves the way to an expanded engineering program consistent with the University's traditional emphasis on disciplinary richness, collaboration and transformation. The creation of a new building is the most significant component of York University's plan to meet the need for engineering graduates in Ontario's growing knowledge-based creative economy.

The Faculty of Science and Engineering at York currently offers an accredited and high quality suite of engineering streams in computer science, geomatics and space. York's Space Engineering stream is the only undergraduate program of its kind in Canada with a unique research relationship with Canadian Space Agency and the National Aeronautics & Space Administration (NASA) in the US.

York University's School of Engineering will embrace a Global Engineering concept. It will be based on the three pillars characterizing 21st century engineering: cooperative education & industry partnerships, entrepreneurship & leadership, and global learning. York University is also creating and Engineering faculty in 2013. It will incorporate business and law.

The Faculty of Science and Engineering at York University provides a high quality education in a variety of basic and applied programs. Our over 200 full-time faculty members receive over $18.5M in research funding annually, largely through the Natural Science and Engineering Research Council, the Canadian Institutes for Health Research, and the Canada Foundation for Innovation.

Innovation York is an extension of York University located at the Markham Convergence Centre. As the industry and innovation branch of York University's Office of the Vice-President Research and Innovation, Innovation York can connect manufacturers with 1,500 world-class researchers whose expertise ranges from science and technology to the social sciences, law, and business. It is a collaboration of industry and academic partners that provides knowledge and services to transform new research and ideas into commercial applications. Partnerships among industry, researchers, hospitals, government agencies and other public-sector partners cover topics of science and technology, social sciences, law and business, to bridge the innovation gap. Innovation York has representation on the Innovation in Manufacturing Advisory Panel (www.investinyork.ca).

II. Intellectual Property: Patents, Trade-marks, Copyrights and Industrial Designs

Intellectual property (IP) is a form of creative endeavour that can be protected through a patent, trade-mark, copyright, industrial design or integrated circuit topography.

Navigating through copyright and patent laws to secure intellectual property (IP) can seem like a daunting task. Several resources exist to help businesses through this process. At the national level, the Canadian Intellectual Property Office is an excellent source of information, and a great place to start learning about what is involved in the process (www.cipo.ic.gc.ca).

Canada's rank in Intellectual Property

Canada is winning patents at a record pace, as companies push to innovate despite sluggish research and development spending in the wake of the recession. U.S. patent authorities issued a record 5,223 patents to Canadian firms and individual inventors in 2010, up 20 per cent from 2009.

The U.S. is the preferred global venue for companies and individuals seeking to enforce their legal rights and secure commercial success. The rapid increase shows Canadian companies are working to dispel the perception that the country regularly comes up short when it comes to innovation.

Canada's major trading partners are winning patents even faster. All but one of the five countries that rank ahead of Canada in U.S. patents are churning them out at a more rapid clip, including No. 1, the United States (up 24 per cent); No. 2, Japan (up 26 per cent); No. 3, Germany (up 25 per cent); No. 4, South Korea (up 26 per cent); and No. 5, Taiwan (up 16 per cent), according to the U.S. Patent and Trademark Office's 2010 annual report. The list of companies winning the most patents includes International Business Machines, Samsung, Microsoft and Canon.

Still, at No. 6, Canada ranks ahead of many other large European countries, including France, Britain and the Netherlands, as well as China.

The latest figures show there's no shortage of innovation in Canada, according to Kaye Scholer LLP in Washington, D.C. These numbers are yet another indication of Canada's culture of innovation, Canada has some of the most productive scientists and engineers in the world.

The push by Canadian provinces, particularly Ontario, to boost manufacturing of green technologies is helping to drive innovation in the sector - and the desire to protect it with patents, As people see the opportunity, they start to get inventive.

Innovation is also measured in other ways. Experts track the publishing of scientific articles, R&D spending and high-tech exports to compare countries, and based on those rankings, Canada rarely cracks the top 10 among the most innovative economies. Based on those international comparisons, the Conference Board of Canada gives the country a near-failing mark of "D" for innovation[18].

Patenting is a key measure of a country's capacity to innovate, marking an essential step in commercializing new ideas and products.

Canada must focus on producing patentable research. Canadian companies need to improve their collaboration with universities and governments and be prepared to take ideas from the lab bench to the patenting stage. Canada should be doing more to commercialize its ideas given that the demand exists: Canadian companies are frequently targeted for acquisition by companies that want their technology.

Canadian Patent Office

In today's world of rapid-fire technological change, the company with the competitive edge is usually the one tapped into the latest developments in a given field. Often people think only large firms with sophisticated research and development departments can afford to stay abreast of new technology. They are unaware of the gold mine of readily available technical know-how waiting to be used at the Patent Office that is accessible online.

The Patent Office is a part of The Canadian Intellectual Property Office (CIPO) and is responsible for granting patents in Canada. It is directed by the Commissioner of Patents. CIPO is an agency of Industry Canada. In addition to patents, CIPO is responsible for most other intellectual property rights including trade-marks, copyrights, industrial designs, and integrated circuit topographies.

The main functions of the Patent Office are to:

- receive and examine applications for patents and grant patents to qualifying applicants
- record assignments of patents
- maintain search files of Canadian and other patent documents and a search room for public use in researching patent documents and records
- publish and distribute patent information

Filing a patent in Canada does not protect your intellectual property globally. The Canadian Intellectual Property Office (CIPO) provides useful information about its product lines, services, and legislative changes, and is also the best way to communicate with CIPO. There are five intellectual property guides, including one on patents, and all are available on the website, along with interactive tools that explain intellectual property (www.cipo.ic.gc.ca).

Canada Business Ontario

For Ontario-based manufacturers, the Canada Business Ontario website provides specialized information on IP. The site offers an information guide on intellectual property that explains patents, trade-marks, copyrights, and other intellectual property information such as industrial designs, integrated circuit topographies and plant breeders' rights. The website provides a web link to the Canadian Intellectual Property Office in Gatineau, Quebec, which hosts a client services centre for intellectual property support. It also provides a link to the Law Society of Upper Canada's Lawyer Referral Service to search for lawyers specializing in intellectual property. The website serves as a one-stop shop for intellectual property information in Ontario (www.cbo-eco.ca).

The World Intellectual Property Organization

The World Intellectual Property Organization (WIPO) is a specialized agency of the United Nations. It is dedicated to developing a balanced and accessible international intellectual property (IP) system, which rewards creativity, stimulates innovation and contributes to economic development while safeguarding the public interest.

Intellectual property (IP) protection has emerged as an important component of national economic policies. Governments face choices on how to design an IP system that best serves their policy objectives. They also need to respond to changes in technology and in business models that may challenge the status quo. WIPO seeks to contribute to a better understanding of the economic effects of different IP policy choices and to offer a first entry point for anyone seeking information on the economics of IP.

WIPO was established by the WIPO Convention in 1967 with a mandate from its Member States to promote the protection of IP throughout the world through cooperation among states and in collaboration with other international organizations. Its headquarters are in Geneva, Switzerland.

Trade-mark, Copyright, and Industrial Design

Patents are occasionally confused with trade-marks, copyrights, industrial designs, and integrated circuit topographies. Like patents, these are rights granted for intellectual creativity and are forms of IP. However:

- patents cover new inventions (process, machine, manufacture, composition of matter), or any new and useful improvement of an existing invention

- a trade-mark is a word, symbol or design (or any combination of these) used to distinguish the wares or services of one person or organization from those of others in the marketplace

1. copyrights provide protection for literary, artistic, dramatic or musical works (including computer programs), and three other subject matter known as: performance, sound recording and communication signal

2. industrial designs are the visual features of shape, configuration, pattern or ornament (or any combination of these) applied to a finished manufactured article

3. integrated circuit topographies refer to the three dimensional arrangement of the electronic circuits in integrated circuit products or layout designs

III. Skilled Workforce / Skilled Trades

Countries have long recognized that the education and skills of the labour force are the underpinnings of innovation. Innovation is only possible if there are people who can perform research that generates new ways of thinking and new knowledge, who can apply their knowledge and skills, who can adopt new technologies and processes, and who can adapt to change.

York Region's population is one of the youngest, highly skilled and best educated in all of Canada. Of the adults between the ages of 25 to 64, 67 per cent have post-secondary education. This rating is higher than both the national and provincial averages and is a key reason for the establishment and growth of many new technology-based companies in York Region.

As York Region shifts to a knowledge-based, globalized economy, manufacturers are finding their best business prospects in the production of high-value goods and services. To take advantage of these prospects, a shift from traditional manufacturing activities is required. Advanced manufacturing requires new knowledge and advanced technical skills. As a result, companies are seeing an increase in their need for highly-skilled employees in manufacturing processes[19].

The skilled trades are a diverse set of careers, with over 140 apprenticeable trades listed in Ontario across four sectors: construction, industrial, motive power, and service. According to Manpower Canada's Talent Shortage 2011 survey, positions like technicians, engineers and mechanics are within the top ten most difficult positions to fill in Canada[20]. Industrial mechanics, tool and die makers, automotive technicians and industrial millwrights are also all in high demand in the manufacturing sector. These positions all require specialized skills, traditionally acquired through post-secondary level programs and industry apprenticeships.

Both the federal and provincial governments have recognized the need to promote positive attitudes towards the skilled trades and to provide improved access to technical training that meets the needs of industry. Apprenticeships provide this hands-on experience, as well as in-classroom time, and are now a key step in becoming a certified tradesperson in Ontario.

While colleges and other post-secondary institutions have been responsive to the increased need for tradespeople, marketing efforts continue in an effort to counter the stigma associated with the skilled trades, and to ensure that youth see these careers as valuable opportunities.

However, this range of activities does not always address the immediate need for workers for many companies. Businesses often must undertake their own efforts, including work to ensure that new programming is accessible to their current staff in the event that it does not currently possess the necessary technical training for advancement. Employers should work closely with their existing employees to identify training opportunities and programs to ensure their staff have the skills they need for the positions available, and identify those employees who show potential for growth[21].

Currently York Region has a slightly higher proportion of the 25 and younger population than the Ontario average suggesting the increasing need for educational and training needs of younger workers within the community.

Analysis of Apprenticeship or Trades Certificate Diplomas

The level of apprenticeships or trades certificates or diplomas attained in York Region is lower than that of Ontario across all age ranges by an average of 1.37 per cent.

Educational Attainment, York Region
Apprenticeship or Trades Certificate or Diploma

Age Cohort	York Region	Ontario	York Region - Ontario
15 - 24	1.91%	2.31%	-0.40%
25 - 34	5.19%	5.98%	-0.79%
35 - 44	6.98%	8.64%	-1.66%
45 - 54	7.29%	9.59%	-2.30%
55 - 64	9.23%	10.91%	-1.68%

Source: Statistics Canada, 2006 Census

Analysis of College, CEGEP, or other Non- university Certificate or Diploma

The level of college, CEGEP or other non-university certificates or diplomas attained in York Region is lower than that of Ontario across all age ranges by an average of 2.01 per cent.

Educational Attainment, York Region College, CEGEP or other non-university Certificate or Diploma

Age Cohort	York Region	Ontario	York Region - Ontario
15 - 24	8.18%	9.86%	-1.68%
25 - 34	21.82%	24.34%	-2.52%
35 - 44	21.58%	23.88%	-2.30%
45 - 54	19.42%	21.50%	-2.08%
55 - 64	15.95%	17.46%	-1.51%

Source: Statistics Canada, 2006 Census

Analysis of University Certificate or Diploma or Degree

The level of university, certificates or diplomas or degrees attained in York Region is significantly higher than that of Ontario across all age ranges by an average of 8.02 per cent.

Educational Attainment, York Region University Certificate or Diploma or Degree

Age Cohort	York Region	Ontario	York Region - Ontario
15 - 24	12.89%	9.35%	3.54%
25 - 34	47.86%	37.18%	10.68%
35 - 44	42.55%	32.72%	9.83%
45 - 54	37.54%	27.20%	10.34%
55 - 64	30.83%	25.11%	5.72%

Source: Statistics Canada, 2006 Census

In a knowledge-based economy, lifelong learning becomes essential to maintain skills and labour force quality which in turn supports a competitive and prosperous economy. Within York Region, a number of companies have formed partnerships with training and education organizations to provide employees with opportunities for workplace training and skills development, but more concerted efforts will be required in the future[22].

Workforce Development Agencies and Initiatives

There are a number of agencies, both national and local, that provide services to assist manufacturers and other employers to access and develop a skilled workforce.

Mitacs

Mitacs, a national, not-for-profit organization, is developing the next generation of innovators with vital scientific and business skills. In partnership with companies, government and academia, Mitacs is supporting a new economy using Canada's most valuable resource – its people. Mitacs has six unique research and training programs: Mitacs-Accelerate, Elevate, Globalink, Enterprise, Step, and Outreach.

- **Mitacs-Accelerate** is a Canadian research internship program providing interns with the opportunity to transfer their skills from theory to real-world application, while companies gain a competitive advantage by accessing high-quality research expertise.
- **Elevate** provides a foundation of cutting-edge research, business, entrepreneurship and scientific management skills to newly-minted PhDs while giving companies access to a highly qualified uniquely trained pool of talent.
- **Globalink** introduces Canada as a world-leading research and innovation destination to top under-graduate students from around the world.
- **Enterprise** is a comprehensive, career-development program that gives graduates of science, technology, engineering and math the opportunity to build their business skills through an intense program of mentorship and work experience with small and medium-sized companies.
- **Step** is Canada's only comprehensive program providing business-ready skills to up-and-coming researchers. Step trains graduate students and post-doctoral fellows in essential interpersonal, project management and entrepreneurial skills required for them to succeed in their future career.

- **Outreach** makes science and mathematics compelling for future researchers – our children – through initiatives such as the nationally-recognized, comedic stage performance, Show Math and online quiz game, MathAmaze.

Workforce Planning Board of York Region and Bradford West Gwillimbury

Workforce Planning BOARD
OF YORK REGION & BRADFORD WEST GWILLIMBURY

The Workforce Planning Board of York Region and Bradford, West Gwillimbury, incorporated in 1997, is one of twenty-five workforce planning zones in Ontario contracted by Ontario's Ministry of Training, Colleges and Universities to facilitate labour market planning and development at the local level.

The Workforce Planning Board continually seeks to enhance the labour market planning process in the community by gathering labour market information, identifying training needs and trends, promoting life-long learning, and building community partnerships to work on local solutions to relevant issues.

Their objectives are:

- To work with the community to identify labour market issues in York Region and South Simcoe consisting of Bradford, West Gwillimbury
- To work with the community to assess the labour market needs and to prepare community based action plans that address those needs
- To act as a facilitator in bringing the appropriate community stakeholders together to work on partnerships as highlighted in their annual "Tomorrow's Opportunities and Priorities (TOPS) Report"

The Workforce Planning Board of York Region and Bradford, West Gwillimbury has representation on the Innovation in Manufacturing Advisory Panel.

Georgina Trades Training Inc. (GTTI)

Georgina Trades Training Inc. (GTTI) is a not-for-profit organization working to bring training opportunities to Georgina. Programs are coordinated through their local facility in Sutton, which hosts advanced technologies for learning (www.gtti.ca).

Finding and Promoting Young Talent in Manufacturing

Several not-for-profits and workforce development boards exist locally, provincially and nationally to promote employment in the skilled trades and to match employment seekers with businesses[23].

- **Apprenticesearch.com** is a website for employers and apprenticeship seekers to post their resumes and job postings. It also provides a variety of skills profiles for the various trades (www.apprenticeshearch.com).
- **Employment Ontario** assessment centres provide guidance in accessing government programs and a listing of trades requiring certification in Ontario (www.skillscanada.com).
- **Skills Canada** is a federally funded program that actively promotes careers in skilled trades and technology to youth; it has local chapters across Ontario (www.skillscanada.com).
- **The Ontario Business Funding Guide** provides businesses with a listing of funding programs and tax credits for job creation, apprenticeships, capital investments in machinery, staff retraining, etc. (www.ontario.ca).
- **The Workforce Planning Board of York Region and Bradford West Gwillimbury** is a local not-for-profit organization that seeks to engage community partners to identify, understand and implement solutions to local labour market needs and challenges (www.wpboard.ca).

Four Small Business Enterprise Centres in York Region serve young entrepreneurs with the Summer Company Program, supported in part by the Ministry of Research and Innovation. They are operated by their respective Economic Strategy/Development Branches. The full list of Ontario's Centres can be found on the Ministry of Research and Innovation website (www.sbe.gov.on.ca).

- The City of Vaughan operates the Vaughan Business Enterprise Centre located on Keele Street, serving the City of Vaughan (www.vaughan.ca/VBEC)

- The Regional Municipality of York operates the York Small Business Enterprise Centre, located in Newmarket. The Centre serves small businesses in the Northern six York Region municipalities: Aurora, East Gwillimbury, Georgina, King, Newmarket and Whitchurch-Stouffville. The Centre is implementing a youth entrepreneurship program in 2012 (www.investinyork.ca)

- The Town of Markham operates the Markham Small Business Enterprise Centre located at the Markham Convergence Centre, serving the Town of Markham (www.msbc.markham.ca)

- The Town of Richmond Hill operates the Richmond Hill Small Business Centre, located at the Richmond Hill Town Hall, serving the Town of Richmond Hill (www.richmondhillonline.com)

IV. Funding Opportunities

It is important for manufacturers in York Region to not only recognize but take advantage of the various support structures that are in place to help them grow and exploit new technologies. Accordingly, this section offers a description and links to the many services and opportunities available to York Region-based manufacturers[24].

Federal Programs

The federal government has funded a multiyear program to develop major new innovative methods for the harvesting and utilization of Canada's forest resources. In addition to increasing the efficiency of harvesting and manufacturing, the program is aimed at developing new products for use in sectors beyond the traditional wood products and pulp and paper user communities[25].

The federal government has also provided over $165 million to fund a major initiative known as the National Centres of Excellence in Commercialization and Research. This initiative continues the focus on commercialization of R&D in areas of national strategic interest, such as health and the environment. In another initiative, the federal government increased funding by $100 million annually to the National Research Council Industrial Assistance Program for increased financial assistance to small and medium sized firms seeking to develop new products and increase productivity[26].

Business Development Bank of Canada (BDC) helps create and develop Canadian businesses through financing, venture capital and consulting services, with a focus on small and medium-sized enterprises (SMEs), with the specific goal of accelerating the success of Canadian entrepreneurs. The BDC's nationwide team has helped 28,000 Canadian entrepreneurs reach their potential. The Business Development Bank of Canada has 65 years serving Canadian entrepreneurs through what could be termed a pan-Canadian presence, with a specific focus on SMEs, in sectors such as manufacturing, exporting, innovation and knowledge-based industries.

The BDC is a financial institution owned by the Government of Canada designed to help build Canadian business capacity, through long-term loans for projects and working capital, subordinate financing: hybrid debt, and equity financing, venture capital, and direct or indirect investments in high technology companies. The BDC also offers quality consulting services at a price that businesses can afford.

Canada Foundation for Innovation (CFI) is an independent corporation created by the Government of Canada to fund research infrastructure. The CFI's mandate is to strengthen the capacity of Canadian universities, colleges, research hospitals, and non-profit research institutions to carry out world-class research and technology development that benefits Canadians. Since its creation in 1997, the CFI has committed almost $5.2 billion in support of 6,353 projects at 130 research institutions in 65 municipalities across Canada. The CFI administers funding for: the Leading Edge Fund and New Initiatives Fund, the Leaders Opportunity Fund, the National Platforms Fund, the Infrastructure Operating Fund, and the Exceptional Opportunities Fund.

Canadian Institutes of Health Research (CIHR) is the Government of Canada's agency responsible for funding health research in Canada. Projects may receive joint funding from CIHR and one or more other partners.

Export Development Canada (EDC) provides various levels and types of funding and loan guarantees to Canadian companies such as account receivable insurance and buyer financing. EDC is designed to help Canadian companies become competitive in the global market place and also provides unsecured loans for small business in the Express Credit program. EDC offers some 24 distinct financing and funding programs to help support the growth and success of Canadian business.

Federal Economic Development Agency for Southern Ontario (FedDev Ontario) programs support economic and community development, innovation, and economic diversification, with contributions to communities, businesses and nonprofit organizations. It will help workers, communities and businesses in Southern Ontario position themselves to take advantage of opportunities. FedDev Ontario began accepting applications in October 2009 under the Southern Ontario Development Program (SODP) for projects that will stimulate local economies and enhance the growth and competitiveness of Southern Ontario businesses and communities. A business enterprise may qualify for SODP funds if it is located in Southern Ontario and is a small and medium-sized enterprise with preference on those with up to 1,000 employees.

South Lake Community Futures Development Corporation is located in Georgina. South Lake Community Futures Development Corporation (South Lake CFDC) is a locally governed, not-for-profit organization delivering the Government of Canada's Community Futures Program to the Town of East Gwillimbury, Town of Georgina and Brock Township.

- South Lake CFDC can provide business loans and other business financing for both new start-ups and existing businesses maintenance or expansion.
- South Lake CFDC can typically lend up $150,000 to assist with business expansion or the purchase of new assets, provide working capital, purchase an existing business or start-up a new business.
- They also work in partnership with 10 other CFDC's across south eastern Ontario to deliver larger pooled loans. These loans are typically up to $500,000.
- South Lake CFDC also operates under a Memorandum of Understanding with the Business Development Bank of Canada to partner on larger loans.
- South Lake CFDC also offer specialized Micro Loans, deferred interest EODP Retro-fit Loans and serve as a community partner for the Canadian Youth Business Foundation loans to entrepreneurs under 35 years of age.

The National Research Council-Industrial Research Assistance Program (NRC-IRAP) is Canada's premier innovation assistance program for small and medium-sized enterprises (SMEs). It is a vital component of the NRC, a cornerstone in Canada's innovation system, regarded world-wide as one of the best programs of its kind. For over 60 years, NRC-IRAP has been stimulating wealth creation for Canada through technological innovation. This is largely accomplished by providing technology assistance to small and medium-sized enterprises at all stages of the innovation process, to build their innovation capacity.

The SR&ED program is a federal tax incentive program, administered by the Canada Revenue Agency (CRA), that encourages Canadian businesses of all sizes, and in all sectors to conduct research and development (R&D) in Canada. It is the largest single source of federal government support for industrial R&D. The SR&ED program gives claimants cash refunds and/or tax credits for their expenditures on eligible R&D work done in Canada.

Provincial Programs

The Ministry of Economic Development and Innovation offers several funds including:

- **Biopharmaceutical Investment Program (BIP)** The BIP offers flexible funding support for projects of $5 million or more to pharmaceutical companies ready to invest in new or enhanced biopharmaceutical projects in Ontario.

- **Ontario Commercialization Investment Funds Program** Faculty, staff or students of a research institute in Ontario may qualify for a grant of up to $225,000 to develop a spin-off technology business.

Innovation Demonstration Fund provides financial support of up to 50 per cent of eligible costs to assist Ontario firms with the commercialization and initial demonstration of their innovative technologies, with preference towards environmental, alternative energy, bio-products, hydrogen and other globally significant technologies. Funding ranges from $100,000 to $4,000,000 per project (www.mri.gov.on.ca)[28].

The Ministry of Training, Colleges and Universities (MTCU) is responsible for the administration of post secondary education and skills training.

MTCU operates Employment Ontario, a one-stop source of information and services for students, job seekers and employers.
The Ministry is responsible for:

- delivering employment and training services to the public across the province
- developing policy directions for employment and training
- setting standards for occupational training, particularly for trades under the Trades Qualification and Apprenticeship Act
- managing provincial programs to support workplace training and workplace preparation, including apprenticeship, career and employment preparation and adult literacy and basic skills.
- undertaking labour market research and planning

In the area of postsecondary education, the Ministry of Training, Colleges and Universities is responsible for:

- developing policy directions for universities and colleges of applied arts and technology
- planning and administering policies related to basic and applied research in this sector
- authorizing universities to grant degrees
- distributing funds allocated by the provincial legislature to colleges and universities
- providing financial assistance programs for post-secondary school students
- registering private career colleges

Employment Ontario has services for employers right across Ontario;

- Get help finding and hiring skilled employees and learn about a number of financial hiring incentives available to employers.
- Assists in hiring students to work during the summer.
- Training and apprenticeships will help you learn about how you can benefit from training and apprenticeship programs and hiring incentives, such as the Apprenticeship Training Tax Credit.
- Find out about programs that can benefit both employers and employees who are dealing with downsizing and layoffs.
- Get access to labour market information and learn how local training boards can help you with forecasting labour supply.
- Work with your community to develop plans for tomorrow's skills needs through Ontario Labour Market Partnerships program.

Other Funding Opportunities

Apprenticeship Opportunities are offered by most of Ontario's colleges, which have developed a variety of programs which provide participants with the in-school and apprenticeship training which leads to a Certificate of Qualification exam. The Province also funds an apprenticeship-oriented co-operative program for Grade 11 and 12 students in the Ontario Secondary School system. Re-training programs provided under the Second Career program are also available and cover some of the costs of post-secondary education and training for eligible workers. Apprentices are matched with experienced skilled workers through a variety of mechanisms, including a variety of online websites postings for employers and potential apprentices. Businesses that hire and train apprentices in the skilled trades are eligible to receive a tax credit. The credit is based on the salaries and wages paid to the apprentice and is applied for when the business files their taxes[29].

Apprenticeship Training Tax Credit is an annual tax credit of up to $5,000 per qualifying apprentice to a maximum of $15,000 over a 36 month period. Offered by two Organizations: Ministry of Revenue (MOR) and Ministry of Training Colleges and Universities (MTCU) – Employment Ontario (EO) (http://www.tcu.gov.on.ca/eng/employers/taxcredit.html).

Employer Signing Bonus is a signing bonus of $2,000 to register a new apprentice in a sector where there is high demand for skilled workers (http://www.tcu.gov.on.ca/eng/employers/emp_bonus.html).

Canadian Manufacturers & Exporters – SMART Manufacturing – Made in Ontario The SMART program helps small and medium-sized manufacturers in Ontario to improve their productivity in order to compete more effectively in the global economy. Projects demonstrating productivity improvement, such as lean design and lean manufacturing, quality improvement, energy efficiency, IT best practices, and environmental impact reduction, may be awarded 50 percent funding up to $50,000. The program is described more fully at (www.cme-smart.ca)[31].

Export Market Access - A Global Expansion Program offered through the Ontario Chamber of Commerce grants up to 50 per cent of eligible costs incurred to develop export sales for businesses with five or more employees and annual sales of $500,000 or more.

Partnerships with Educational Institutions can enable creativity or innovation. To engage in these opportunities, contact a college, university, or innovation partner listed in this guide. Ontario leads all provinces in University-Based research funding with 19 Universities earning 40 per cent of total research income.

The National Angel Capital Organization is the industry association representing Canadian Angel capital. The National Angel Capital Organization does not invest capital in companies, they do provide referrals to services and to groups that can help entrepreneurs to grow their business. They promote a vibrant Angel* community and culture in Canada through the development of formal Angel investor groups, best practices education and mentoring programs, and the formation of collaboration and co-investment mechanisms to encourage an efficient risk capital market in Canada.

The mission is to increase the quantity, quality, and success of Angel investments in Canada, thus creating a greater pool of capital for innovative start-up companies. The National Angel Capital Organization:

- Is not-for-profit and makes no investments
- Advocates best practices for Angels
- Encourages and develops local Angel groups
- Provides networking opportunities among Angels
- Provides a collective voice for Angels

Angel groups, clubs, networks and organizations must be registered with The National Angel Organization – Ontario (NAO-Ontario) or another reputable industry association, such as National Angel Capital Organization, to be eligible to apply for matching funds from the FedDev Ontario Investing in Business Innovation Program.

* Angels typically invest their own funds, unlike venture capitalists, who manage the pooled money of others in a professionally-managed fund.

Natural Sciences and Engineering Research Council (NSERC) Bursaries and Grants is the national instrument for making strategic investments in Canada's capability in science and technology. NSERC supports both basic university research through discovery grants and project research through partnerships among universities, governments and the private sector, as well as the advanced training of highly qualified people. Only grants and bursaries awarded to universities have been included in this document.

York Angel Investors are a group of accredited, early-stage investors with professional experience in the areas of information technology, telecommunications, internet, online applications, enterprise and SaaS software, retail and pharmaceutical enterprises. The group provides a collaborative mentorship approach and strategic financing to support entrepreneurs at stages of early growth, resulting in return on investment for both the firm and the businesses it works with (www.yorkangels.com)[35].

Yves Landry Foundation – Achieving Innovation & Manufacturing Excellence (AIME) Initiative. The AIME initiative is a partnership between the Yves Landry Foundation and the Ontario Government to provide a grant of up to $50,000 per firm to foster training that will lead to innovation within the manufacturing sector. The objectives of the grant are to provide training that will support new technology, new processes or procedures for innovation and training that will support and develop highly skilled personnel in any area leading to innovation (www.yveslandryfoundation.com)[37].

V. Appendix

i. Background and Context

In March and October 2010, York Region manufacturers, economic development offices, Chambers of Commerce and the Board of Trade participated in a number of manufacturer symposia hosted by York Region. These symposia delivered the results of a survey of 301 York Region manufacturers undertaken by Ipsos Reid which was financially supported by Invest Canada-Community Initiatives (ICCI), Foreign Affairs and International Trade Canada. Following this, they also participated in the "Productivity and Profit" manufacturer symposia held in October, 2011 which resulted in the development of the "Innovation in Manufacturing Project" Consortium.

The survey and symposia also led to the Ministry of Training, Colleges and Universities (MTCU) funding the Innovation in Manufacturing Project as MTCU recognized that manufacturing is central to York Region's economic future. The Project objectives are to engage and help to revitalize the manufacturing sector which will assist policy makers, innovative manufacturers and investors in identifying competitive opportunities in York Region manufacturing and lay the essential groundwork to encourage new and sustained manufacturing investment at the local level.

In May 2011, the Regional Municipality of York and economic development partners in local municipalities established an Innovation in Manufacturing Advisory Panel, designed to support local manufacturing businesses by encouraging and fostering the conditions for innovation and collaboration in manufacturing in York Region. Providing advice and acting through its advocacy work, the Innovation in Manufacturing Advisory Panel has been working diligently to help innovative manufacturers meet their goals. By means of event hosting, research, and dissemination activities, the Advisory Group has also been helping to grow, modernize, and champion York Region's manufacturing sector.

Project discussions and the resulting "Productivity and Profit through Innovation" seminars for manufacturers indicated that manufacturers are looking to learn about the development of alliances with research agencies and how to tap into this valuable innovation resource. One of the options presented included engaging the Ontario Centres of Excellence.

The Innovation in manufacturing project included MedEDGE, an event delivered, in partnership with the Town of Richmond Hill and ventureLAB. Held in June 2011, MedEDGE engaged over 200 participants including life science businesses, encouraged the hospital to engage in collaborative discussions, and served as the launch the inaugural MedEDGE series.

York Region has an extensive innovation ecosystem that manufacturers have access to including networks of excellence, universities, colleges, two school boards, a hospital network, and a workforce planning board.

The purpose of "Innovate York: Guide for York Region Manufacturers" is to provide a blueprint for manufacturers to flourish in York Region's innovation ecosystem.

ii. Manufacturing Trends

The Organization for Economic Cooperation and Development (OECD) defines advanced manufacturing as the integration of computer controlled or micro-electronics-based equipment in the design, manufacture, or handling of a product. Based on that definition, much of the manufacturing in Canada and Ontario is likely to qualify as advanced manufacturing. This is especially relevant given the restructuring and reorientation or manufacturing activities across most developed economies. In order to compete with lower cost destinations, manufacturing businesses in these economies have adopted more technology-based processes to manufacture capital-intensive goods. In order for a community to understand the prospects and opportunities for adoption of advanced manufacturing technologies by its business community, it is necessary to look at the prevailing trends at play in the advanced manufacturing industry around the world and across Canada.

Global Trends

Global patterns of production have been shifting for some time. Lower cost destinations continue to acquire low-skill and labour intensive manufacturing processes while restructured manufacturing industries in developed economies reorient their focus to higher-value goods that require more innovative processes to manufacture. However, traditionally low-cost destinations are emerging as competition in new areas as well. Investments in skills, technology, and infrastructure have allowed many of these low-cost competitors to establish production at higher levels of the value chain. As such, there is a need for traditional manufacturers in developed economies to continue adopting new cost-saving and efficient processes for producing innovative new products. The following section illustrates some of the major trends influencing manufacturing around the world.

Differing Outputs and Values

Global industrial output has rebounded over the last year, growing 5.1 per cent from 2009 to 2010 after a decline from 2008 to 2009[1]. This slight recovery has differed by economy and region, however. Developed nations accounted for an increase of 3.1 per cent in output from

2009 to 2010, while developing and emerging economies experienced a 7.3 per cent increase in output[2]. Overall, industrial output is expected to grow year-over-year across the globe over the next several years. However, gains in output from developing and emerging economies are projected to continue out-pacing output increases from developed economies to 2016[3].

Despite the differences in output, which have favoured developing economies, the value of exported goods from developed nations has remained higher than in developing nations. In 2010, developed economies exported $8.2 trillion (US) in goods and services while developing economies exported $6.4 trillion[4] - the majority in both categories focused on merchandise rather than services. Overall, while developed economies continue to lag in production, they continue to account for higher valued exports than developing economies. This suggests the continued shift towards higher-capital goods and more knowledge-based services.

Maintained Capital and Research and Development Spending

Global manufacturers appear to be taking advantage of opportunities to improve their productivity and processes. In the summer of 2011, a net balance[5] of +45.2 per cent firms planned to increase their spending on fixed assets over the coming year, the highest proportion of firms since the autumn of 2008[6]. Capital spending over the next year is set to rise the fastest in the BRIC (Brazil, Russia, India and China) nations, though firms based in the US, Japan and the EU are all expecting higher levels of capital investment as well[7]. By sector, electrical and optical manufacturers expect the highest levels of capital expenditure, followed by timber and paper, food and drink, and chemicals and plastics.

Global manufacturers also expect to increase spending on R&D over the coming year, with a net balance of +17.5 per cent of manufacturers responding positively. Again, BRIC nations led the way (+30.1 per cent), though manufacturing businesses in the US, Japan and the EU also expect higher levels of R&D expenditure[8]. Mechanical engineering firms expected the highest levels of investment, with electrical and optical manufacturers following close behind on R&D spending prospects[9]. Overall, while the global manufacturing industry is only slowly recovering from the recession in terms of output, manufacturers are continuing to consider spending on machinery, equipment, and R&D as critical to their future activities.

Rising Productivity

With investments in machinery and processes, there are usually accompanying increases in manufacturing productivity. Despite declines in output, manufacturing productivity (output per hour worked) has increased among most developed and developing economies over the last year. From 2009 to 2010, productivity increased in the United States (5.8 per cent) and Canada (4.3 per cent)[10]. Some nations experienced double digit increases in productivity over the last year, including Singapore (32.7 per cent), Japan (13.9 per cent), Taiwan (15.2 per cent) and Sweden (13.4 per cent)[11]. For the most part, these numbers are a reversal of the previous year, where productivity fell in a number of countries based on declines in output and hours worked. Some of the world's largest

manufacturing nations are experiencing productivity gains, which suggest higher levels of investment in advanced manufacturing technologies throughout these nations.

Positive Employment Prospects

The most recent recession has challenged manufacturing employment in both developed and developing economies. In Canada, employment in the manufacturing industry dropped from 2.1 million in 2006 to 1.7 million in 2010. The US lost 1.7 million workers in the manufacturing industry from 2008 to 2009 alone[12].

However, the moderate recovery of the global economy has been enough to raise the prospects for employment in the manufacturing industry. By summer 2011, the global manufacturing industry identified positive prospects for employment growth, with a net balance of +18.8 per cent of manufacturers expecting to hire additional employees[13]. US-based firms showed the highest prospects for employment growth, with a net balance of +31.5 per cent of manufacturers proposing growth. The BRIC nations and the EU both showed moderate growth prospects as well[14].

The sectors with the highest potential for employment growth over the next year included electrical and optical manufacturers (+25.5 per cent), mechanical engineering firms (+19.8 per cent), and food and drink manufacturers (+19.4 per cent) – many of which are likely to implement advanced technologies in their processes. Employment prospects appear to be moving in a more positive direction across the globe. This trend is especially relevant for the developed economies that are attempting to regain manufacturing employment that has been lost during the recession.

National Trends

Manufacturing continues to play a significant role in Canada's economy, employing an estimated 1.7 million people in 2010 and accounting for 12.9 per cent of the Country's gross domestic product (GDP). Like many other developed economies, however, the best prospects for Canadian manufacturers lie in adopting more technology-based processes to produce high-value goods and services. In many ways this will allow Canada's manufacturers to regain some of the competitiveness that they have lost over the last several decades.

Innovation Policy in Canada

Innovation in Canada has been affected by two major factors. The first is the constitutional framework within which Canada exists. While there is a national government, many of the sectors which play an important role in innovation are under the control of the ten provincial governments. These include education, health, construction and natural resources (agriculture, oil and gas, mining, and forestry). The distributed responsibility for these sectors does not contribute to a strong national innovation policy related to these sectors.

Canada does not have separate science and technology (S&T) and innovation policies. Rather policymakers consider that there is a continuum from knowledge creation to development of application, and finally commercialization and utilization. Canada has always had a high level of government expenditures on research and development, about 50 per cent higher than the EU average. In the past, the focus has been on supporting early and middle stage R&D carried out at universities and government laboratories. However, recently, there has been an increased emphasis on supporting the development of applications of commercial interest and value, coupled with a small reduction in funding for traditional research and development (R&D) programs[15].

Institute for Competitiveness and Prosperity

The Institute for Competitiveness and Prosperity responds Canada's public policy in its 2011 report "Canada's Innovation Imperative." Current public policy is directed toward invention, not innovation. Inventions are driven by the researcher's desire to discover something new and unique – whether or not they add value to people's lives or their prosperity. Though invention is important for human progress, it should not be confused with innovation, which improves products or processes to enhance economic value (www.competeprosper.ca)[16].

Investments in Process and Productivity

Annual capital investment in Canada's manufacturing sector fell by an average of 1.8 per cent per year from 2001 to 2010[17]. However, from 2009 to 2010 capital investments by Canadian manufacturers rose 14.5 per cent, primarily based on an increase of 50 per cent in

construction spending[18]. Machinery and equipment spending increased by 8.8 per cent over the last year as well[19]. Into 2011, the intentions for the manufacturing sector remain positive. Spending is expected to rise on both machinery and equipment (14.5 per cent) and construction (17.9 per cent) to the end of 2011, for an overall increase of 15.1 per cent in capital investment from Canada's manufacturers[20].

This supports the findings of Canadian PLANT's survey of Canadian manufacturers. Over 2010 and 2011, 46 per cent of manufacturers identified investment in process improvement (in both years) as their top priority, while investments in machinery and equipment (33 per cent for 2011 and 37 per cent for 2012) and R&D (37 per cent for 2011 and 35 per cent for 2012) were also identified as priorities by the sample of Canadian manufacturers[21].

Though overall investment has fallen, the most recent data on investments and intentions suggest Canadian manufacturers are regaining the confidence to make capital investments in machinery, process improvements and facility expansion.

Labour Productivity Gains

Between 2001 and 2010, labour productivity in the manufacturing sector (GDP for every hour worked) decreased by 1.5 per cent per year on average. This decline contrasts with annual labour productivity growth of 1.7 per cent per year for the entire economy[22]. However, over the most recent time period (2009 to 2010) labour productivity increased by 5.7 per cent, well out-pacing the growth across the rest of the Canadian economy[23]. In light of Canada's declining employment in manufacturing, this suggests that Canada's manufacturers have been making capital investments to maintain and expand their output.

Increase in Knowledge-based Employment

From 2000 to 2009, employment in Canada's manufacturing sector fell at an average annual rate of 2.8 per cent[24]. By 2010 employment had declined further. The level of employment in Canada's manufacturing sector varied by type of employee over that time. While the number of production-oriented employees fell by an average of 3.8 per cent per year, the number of administrative workers in the Canadian manufacturing industry has increased by 0.4 per cent per year over the last decade[25]. At the same time, average annual salaries in the manufacturing sector increased by an average of 2.0 per cent per year, and total wages paid out to administrative workers in the manufacturing sector increased by 1.9 per cent per year[26]. Over the last decade, the sector has gained administrative workers like executives, engineers, and computer scientists, which has contributed to higher wages in the sector. In part, this suggests a shift from traditional manufacturing activities that offer lower skilled, lower paying opportunities to more technology-intensive manufacturing processes that require a highly-educated and skilled workforce.

Emphasis on Small Businesses

In December 2008, micro-sized (1-4 employees) manufacturing businesses accounted for 32 per cent of all employer establishments in Ontario's manufacturing sector[27]. Medium (100-499 employees) and large (500+ employees) businesses accounted for 7 per cent and 1 per cent of the total manufacturing sector employer establishments in Ontario[28]. By the end of 2010, the number of micro-sized businesses had risen to account for 34 per cent of all employer establishments in Ontario's manufacturing sector, while the share of medium and large-sized businesses stayed relatively constant[29]. Similar proportions of micro, medium and large-sized businesses were found across Canada's manufacturing sector in 2010 as well. While an increased emphasis on smaller businesses may mean lower overall employment, it also highlights the emergence of smaller, more entrepreneurial manufacturing operations across Canada generally, and within Ontario more specifically. These smaller firms have the flexibility to quickly adapt to changing market demands and customized product development. While large manufacturers continue to play a role in Canada and Ontario, a thriving small business sector is emerging to respond to the new realities of the global manufacturing environment. The emergence of smaller manufacturing operations has impacts on overall employment prospects, workforce capabilities, and manufacturing space at the local and regional level.

New Skills and Employee Engagement

Canada's manufacturing industry is now more oriented toward innovative production processes that require a high knowledge-component. This includes subsectors focused on high-value goods and services like aerospace, automotive, ICT, medical devices, and clean technologies. To remain competitive, Canadian manufacturers need to continuously improve their processes and products.

The need to innovate has pushed employers to look for and to utilize the creative capacity of their entire workforce. Traditionally an underutilized resource in much of North America's manufacturing sector, production workers are increasingly being asked to contribute ideas for product and process improvement. This has generated demand for a new type of manufacturing worker skilled in creative thinking, teambuilding and problem solving. In 2011, manufacturers identified areas in technology, innovation and creativity as requiring further development in the manufacturing workforce. Forty-three percent of manufacturers placed innovative thinking/creativity as their top priority for skill development, while technical skills (42 per cent), teamwork (41 per cent) and problem solving (38 per cent) also rated highly[30]. The integration of technology into manufacturing processes represents a critical component in maintaining competitiveness, but the skills and capacity of the workforce play a key role in continuous improvement as well.

Canada's Manufacturing Hall of Fame and Innovation Awards

Canada has some of the most innovative companies around the globe. In 2000, Canadian Manufacturers and Exporters (CME) launched the Canadian Innovation Awards. This awards program was designed to recognize and promote the successes in Canada and highlight best practices as a means to encourage innovation and improve the competitiveness of Canadian businesses in the manufacturing and exporting industry.

Canada has a rich and vibrant manufacturing history. As the engine that drives our economy, manufacturing has played a vital role laying the foundation for 21st century Canada. The Canadian Manufacturing Hall of Fame recognizes those who play a vital role in shaping the industry, our economy and in essence, our way of life.

The Hall of Fame helps enhance public awareness of Canadian manufacturing's rich history and of its importance to Canadian and international markets. The recipients are recognized for their significant contributions made to the Canadian manufacturing industry. Two Hall of Fame recipients are the founders of Magna International Inc., and Robertson Inc., inventor of the Robertson's socket head screw that revolutionized the industry.

Magna International Inc. (Aurora Ontario) was inducted to the Canadian Manufacturing Hall of Fame in 2006. Franck Stronach was inducted as founder. Central to the company's success is Stronach's unique management philosophy, which empowers employees by making them stakeholders. Magna's Fair Enterprise business model predetermines the annual percentage of profits shared between employees, management and investors, and makes every employee a shareholder in the company. These rights are enshrined in Magna's governing Corporate Constitution.

P. L. Robertson (Milton, Ontario) was an innovator, an industrialist and an astute businessman. He was known throughout Canada as the inventor of the Robertson screw. Located in nearby Milton, ON, Halton Region, Robertson applied for and patented numerous items but it was his 1906 patent that would make him famous - a screw with a square pyramid socket punched in the centre of its head. He began production of the screw in 1908, using machinery mostly of his own design. His products became widely used, from the wooden bodyworks of Henry Ford's model T to ships built by the British Navy in WWII. Robertson's socket head screw revolutionized the industry. With the accuracy of one one-thousandth of an inch, the square headed screwdriver has a tighter fit than a slot screwdriver and rarely slipped.
Fully 85 per cent of the screws sold in Canada use the Robertson head. About 10 per cent of the screws sold in the U.S. are Robertson.

Nomination forms for the Canadian Manufacturing Hall of Fame are awarded in five categories: founder, leadership, innovator, labour and special contribution.

Founder: Demonstrates entrepreneurial, managerial and leadership skills and innovative strategy in launching and planning the founding and directing of a corporate entity.

Leadership: Builds the entity through assembly of an outstanding team to carry on the work of building a corporation; display of exemplary managerial capabilities in directing one or more corporations over a career involving management of change, revitalization, innovation, training of work forces, etc.

Innovator: Demonstrates technological advances by the development and/or implementation of one or more technologies or operating methods that have had profound impact on the firm and beyond.

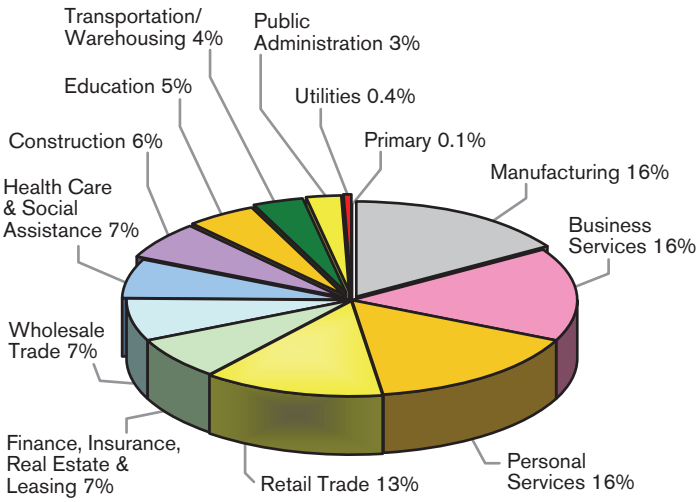
Labour: Contributes to the development of creative or innovative and enduring labour-management structures, successful within one or more corporations leading to benefits for both the corporation and the employees.

Special Contribution: Outstanding contribution by an individual external to the industry in such areas as education or professional development, supportive public policies of government programs, communication and information.

Nomination forms and further information can be found at (www.innovationawards.ca).

Regional Trends

Manufacturing remains the largest component of York Region's diversified economy, accounting for 16.2 per cent of total employment across the Region. Manufacturing's share of total employment has declined seven per cent from 2006. Understanding that importance, York Region conducted a survey of its manufacturing sector in 2009, which led to a series of conclusions about the current condition and future prospects of the Region's manufacturers:



- Over half of respondents (53 per cent) saw an opportunity to gain market share or a competitive advantage with the conclusion of the global recession.

- Approximately 21 per cent of firms spend 6 per cent or more of their total sales on R&D, with the majority (47 per cent) of firms focused on new product development rather than product improvement (22 per cent) or production improvement (17per cent).

- The majority (81per cent) of businesses have introduced new products or capabilities to the marketplace over the last five years, while two-thirds (67per cent) of all manufacturers plan to introduce a new product to the marketplace by the end of 2011.

- Looking forward to the end of 2012, 30 per cent of firms expect their workforce to expand. Overall, firms had few concerns with the availability, quality or stability of the local labour force, although 30 per cent reported problems with recruitment.

- Despite an overall decline in sales, about one-third (35 per cent) of firms planned to expand to the end of 2012.

Consistent growth across establishments of all sizes is positive

This section, including Tables 1 to 5 in the references, outlines the business pattern changes and trends that have occurred across York's manufacturing sector from 2008 to 2011. In order to assess these changes, Canadian Business Patterns Data has been used. Produced by Statistics Canada, Canadian Business Patterns Data provides a record of business operations by industry and size, using data collected from the Canada Revenue Agency (CRA). The business data collected for the Region of York includes all local business locations which meet at least one of the following criteria:

- Have an employee workforce for which they submit payroll remittances to CRA; or

- Have a minimum or $30,000 in annual sales revenue; or

- Are incorporated under a federal or provincial act and have filed a federal corporate income tax form within the past three years.

The Canadian Business Patterns Data records business counts by "Total", "Indeterminate" and "Subtotal" categories. The establishments in the "Indeterminate category include the self-employed (i.e. those who do not maintain an employee payroll, but may have a workforce consisting of contracted workers, family members or business owners). In this analysis, they will be referred to as "non-employers". Businesses accounted for in the "Subtotal" classification are those that report employment numbers – in this analysis, they will be referred to as "employers."

In terms of growth, the small and medium sized manufacturing businesses in York Region experienced high levels of growth from 2008 to 2011, *see Table 1*. Overall, the number of employer manufacturing establishments in York Region increased by 49 per cent from December 2008 to June 2011 - from 1,710 business locations to 2,548 business locations. In terms of absolute growth, the largest gains in the number of business locations were in the 1-4 employee size category, which grew by 221 new business locations. However, locations in the 100-199 employee range showed the strongest rate of growth, more than doubling their number in the Region from 2008 to 2011. This alone represents a strong increase in employment growth within the Region. Considering the economic impact of the 2008 recession on Ontario's manufacturing sector, this consistent growth across establishments of all sizes is positive and indicates a strong foundation for the manufacturing sector in York Region moving forward.

York Region Manufacturing Industry Employment

Business establishments in the manufacturing sector are dominated by companies and enterprises that employ less than 20 people; in 2011, 907 establishments employed 1-4 people, 537 employed less than 5-9 people, and 412 employed 10-19 people. Collectively these small and medium-sized businesses represent 73 per cent of the manufacturing businesses in the Region that report employees. As the region moves forward, it is essential to understand and support the needs of these small manufacturing businesses. This approach is particularly important in light of research that suggests that an overwhelming percentage of new investment is derived from companies already located in a community, and that small to medium-sized businesses create the bulk of an economy's new jobs.

In terms of industry concentration, the following subsectors of the industry exhibited the highest proportion of manufacturing total (employer and non-employer) locations in York Region in 2011:

- Fabricated Metal Products (13.0%)
- Printing (11.9%)
- Machinery (11.4%)
- Furniture (9.0%)
- Food (7.1%)

Table 2 outlines the concentration of business locations by all manufacturing industry subsectors (3-digit NAICS) in York Region in 2011.

Growth in York Region's Manufacturing Significant over 2008 to 2011

Over the 2008-2011 time period, several subsectors of the manufacturing sector in York Region experienced significant growth, both in percentage and absolute change:

- Fabricated metal manufacturing, with 247 new facilities and an 84.9 per cent growth rate
- Furniture and related product manufacturing, with 173 new establishments and an 85.2 per cent growth rate
- Machinery manufacturing, with 119 new establishments and a 35.3 per cent growth rate

Canada's shift to higher-capital goods and advanced manufacturing has favoured durable goods manufacturers – where technology-based processes are more likely to be used and where the products are typically of higher value (i.e. automobile or medical device). As the advanced manufacturing sector expands in Canada, the growth will likely be led by more durable goods producers, rather than their non-durable (products only uses for consumption or production) counterparts.

The Conference Board of Canada predicts a continued recovery for many of these sectors, especially machinery production and fabricated metals, throughout 2011. However, the continued rise in the price of key inputs, such as copper and other ferrous metals, or energy, has the potential to affect prospects in these sectors[17]. However, since these subsectors of the manufacturing industry add the highest value to their products compared to the rest of the industry, they are likely to remain key drivers of the Canadian manufacturing sector and its employment levels.

Also of note is the growth in the petroleum and coal product manufacturing (100 per cent), non-metallic metal manufacturing (92.5 per cent), plastics and rubber manufacturing (88.8 per cent), wood product manufacturing (72.0 per cent), and beverage manufacturing (69.6 per cent) subsectors between 2008 and 2011, *see Table 3*.

Manufacturing is Focused Primarily in Vaughan and Markham

York Region's manufacturing industry is largely concentrated in the central urban areas of the City of Vaughan and the Town of Markham. The proportion of total manufacturing businesses across the Region that fall into each of York Region's the 9 municipalities is indicated below. Vaughan makes up the largest portion of the manufacturing activity, with over 51 per cent of York Region's manufacturing businesses located within its boundaries.

Municipality	Manufacturing Businesses	Distribution (%)
Aurora	79	3.2
East Gwillimbury	21	1.1
Georgina	27	1.1
King	37	1.5
Markham	649	26.3
Newmarket	151	6.1
Richmond Hill	154	6.2
Vaughan	1271	51.2
Whitchurch Stouffville	82	3.3
York Region (Total)	2471	100.0

Geographic distribution of manufacturers by sub-sector

Vaughan represents the core of manufacturing in York Region, with Markham accommodating an additional quarter of the businesses in the sector. While Vaughan has a defined presence across most manufacturing subsectors, Markham is the home to a significant portion of the businesses in the textile and clothing manufacturing, printing and related activities, and the computer and electronic product manufacturing subsectors. Aurora and Whitchurch-Stouffville also have strong concentrations of business locations in the primary metal manufacturing sector (Aurora with 15.8 per cent) and the non-metallic mineral product manufacturing (Whitchurch-Stouffville with 10.2 per cent), *see Table 4*.

Production of durable goods has higher added value

An analysis of the value-added activity per subsector of manufacturing demonstrates the benefits of producing durable goods products, as they tend to have a much higher added value. These industries and the resulting increases in value-added activity have been driving more positive prospects in the manufacturing sector of late, not just in York Region, but across the province. The number of establishments in York Region operating in this area has grown substantially since 2008, and as such the value of durable goods in the Region has also substantially increased.

Employment in the fabricated metals, machinery manufacturing, and transportation equipment manufacturing sectors typically requires a higher skill level and offers better compensation to employees than in other sectors. However, these high-skill sectors are also sensitive to market changes like the increasing costs of materials and energy, the rising value of the Canadian dollar, continuing competition from China (especially in the transportation sector) and the economic outlook in the United States. Currently, most types of manufacturing activity are rebounding well from the lows experienced in the most recent recession. As an example, the rebound in the transportation sector fuels much of the activity in the fabricated metals sector, and continued high commodity price also increases the demand for machinery-related outputs, *see Table 5*.

Table 1

York Region Manufacturing Sector, by Employment Size, 2008 and 2011

Size	2008	2011	Absolute Change	Percentage Change (%)
Total	3,102	4,139	1,037	33.4
Indeterminate (Non-employers)	1,392	1,591	199	14.3
Subtotal (Employers)	1,710	2,548	838	49.0
1-4	686	907	221	32.2
5-9	356	537	181	50.8
10-19	260	412	152	58.5
20-49	216	383	167	77.3
50-99	100	147	47	47.0
100-199	46	94	48	104.4
200-499	39	60	21	53.9
500 +	7	8	1	14.3

Source: Derived from Statistics Canada, Canadian Business Patterns, December 2008 and June 2011, by Millier Dickinson Blais, 2011

Table 2

York Region Manufacturing Sector by 3 digit NAICS (Total, Subtotal, Indeterminate), 2011

Industry (NAICS)	Total	Non-employers	Employers
Total	4,139	1,591	2,548
311 - Food Manufacturing	295	97	198
312 - Beverage and Tobacco Product Manufacturing	39	27	12
313 - Textile Mills	31	15	16
314 - Textile Product Mills	53	30	23
315 - Clothing Manufacturing	126	73	53
316 - Leather and Allied Product Manufacturing	26	13	13
321 - Wood Product Manufacturing	160	60	100
322 - Paper Manufacturing	58	13	45
323 - Printing and Related Support Activities	494	183	311
324 - Petroleum and Coal Product Manufacturing	10	4	6
325 - Chemical Manufacturing	128	50	78
326 - Plastics and Rubber Products Manufacturing	185	60	125
327 - Non-Metallic Mineral Product Manufacturing	154	42	112
331 - Primary Metal Manufacturing	23	8	15
332 - Fabricated Metal Product Manufacturing	538	174	364
333 - Machinery Manufacturing	457	177	280
334 - Computer and Electronic Product Manufacturing	235	90	145
335 - Electrical Equipment, Appliance and Component Manufacturing	113	48	65
336 - Transportation Equipment Manufacturing	132	57	75
337 - Furniture and Related Product Manufacturing	376	125	251
339 - Miscellaneous Manufacturing	506	245	261

Source: Derived from Statistics Canada, Canadian Business Patterns, December 2008 and June 2011, by Millier Dickinson Blais, 2011

Table 3

York Region Manufacturing Sector by 3 Digit NAICS (Total, Subtotal, Indeterminate), 2008 and 2011

Sector (NAICS)	2008			2011			Total Absolute Change	Total Percentage Change
	Total	Non-employers	Employers	Total	Non-employers	Employers		
Total	3,102	1,392	1,710	4,139	1,591	2,548	1,037	33.4%
311 - Food Manufacturing	256	90	166	295	97	198	39	15.2%
312 - Beverage and Tobacco Product Manufacturing	23	14	9	39	27	12	16	69.6%
313 - Textile Mills	36	19	17	31	15	16	-5	-13.9%
314 - Textile Product Mills	28	22	16	53	30	23	15	39.5%
315 - Clothing Manufacturing	116	69	47	126	73	53	10	8.6%
316 - Leather and Allied Product Manufacturing	18	12	6	26	13	13	8	44.4%
321 - Wood Product Manufacturing	93	51	42	160	60	100	67	72.0%
322 - Paper Manufacturing	42	13	29	58	13	45	16	38.1%
323 - Printing and Related Support Activities	491	213	278	494	183	311	3	0.6%
324 - Petroleum and Coal Product Manufacturing	5	4	1	10	4	6	5	100.0%
325 - Chemical Manufacturing	87	42	45	128	50	78	41	47.1%
326 - Plastics and Rubber Products Manufacturing	98	46	52	185	60	125	87	88.8%
327 - Non-Metallic Mineral Product Manufacturing	80	28	52	154	42	112	74	92.5%
331 - Primary Metal Manufacturing	17	5	12	23	8	15	6	35.3%
332 - Fabricated Metal Product Manufacturing	291	122	169	538	174	364	247	84.9%
333 - Machinery Manufacturing	338	141	197	457	177	280	119	35.2%
334 - Computer and Electronic Product Manufacturing	229	101	128	235	90	145	6	2.6%
335 - Electrical Equipment, Appliance and Component Manufacturing	108	47	61	113	48	65	5	4.6%
336 - Transportation Equipment Manufacturing	107	48	59	132	57	75	25	23.4%
337 - Furniture and Related Product Manufacturing	203	75	128	376	125	251	173	85.2%
339 - Miscellaneous Manufacturing	426	230	196	506	245	261	80	18.8%

Source: Derived from Statistics Canada, Canadian Business Patterns, December 2008 and June 2011, by Millier Dickinson Blais, 2011

Table 4

York Region Manufacturing Sector by 3 Digit NAICS Subsector, 2010, by Municipality

Industry (NAICS)	Markham	Newmarket	Richmond Hill	Vaughan	Other 5 Municipalities
Total	26.30%	6.10%	6.20%	51.40%	10.00%
311 - Food Manufacturing	30.20%	6.40%	9.00%	43.90%	10.50%
312 - Beverage and Tobacco Product Manufacturing	27.30%	9.10%	9.10%	45.50%	9.00%
313 - Textile Mills	46.70%	0.00%	13.30%	33.30%	6.70%
314 - Textile Product Mills	28.00%	4.00%	0.00%	60.00%	8.00%
315 - Clothing Manufacturing	48.00%	2.00%	6.00%	42.00%	2.00%
316 - Leather and Allied Product Manufacturing	58.30%	0.00%	0.00%	33.30%	8.40%
321 - Wood Product Manufacturing	15.20%	4.35%	2.20%	63.00%	15.25%
322 - Paper Manufacturing	36.40%	2.30%	14.60%	50.00%	6.70%
323 - Printing and Related Support Activities	46.80%	4.90%	7.40%	33.10%	7.80%
324 - Petroleum and Coal Product Manufacturing	33.30%	0.00%	0.00%	66.70%	0.00%
325 - Chemical Manufacturing	28.20%	6.40%	3.90%	47.40%	14.10%
326 - Plastics and Rubber Products Manufacturing	13.80%	3.30%	3.30%	76.40%	3.20%
327 - Non-Metallic Mineral Product Manufacturing	13.90%	7.40%	1.90%	63.00%	13.80%
331 - Primary Metal Manufacturing	15.80%	0.00%	21.10%	47.40%	15.70%
332 - Fabricated Metal Product Manufacturing	11.90%	7.20%	5.20%	65.30%	10.40%
333 - Machinery Manufacturing	20.20%	13.30%	6.80%	45.60%	14.10%
334 - Computer and Electronic Product Manufacturing	45.50%	4.80%	10.30%	33.80%	5.60%
335 - Electrical Equipment, Appliance and Component Manufacturing	36.80%	7.40%	7.40%	38.20%	10.20%
336 - Transportation Equipment Manufacturing	18.00%	7.70%	3.90%	55.10%	15.30%
337 - Furniture and Related Product Manufacturing	18.20%	2.00%	5.30%	65.20%	9.30%
339 - Miscellaneous Manufacturing	30.30%	6.40%	8.00%	46.20%	9.10%

Source: Derived from Statistics Canada, Canadian Business Patterns, December 2010, by Millier Dickinson Blais, 2011

Table 5

York Region Manufacturing Sector, Value Added, 3 digit NAICS, 2008 and 2011

Industry (NAICS)	2008	2011	Average value add (2008 CAD$) per sector
311 - Food Manufacturing	$ 295,496.98	$ 525,130.17	$ 1,780.10
314 - Textile Product Mills	$ 8,517.91	$ 20,762.41	$ 532.37
315 - Clothing Manufacturing	$ 8,462.35	$ 22,686.30	$ 180.05
316 - Leather and Allied Product Manufacturing	$ 7,798.26	$ 207,953.72	$ 1,299.71
323 - Printing and Related Support Activities	$ 444,978.95	$ 790,171.99	$ 1,600.64
325 - Chemical Manufacturing	$ 190,371.68	$ 541,501.67	$ 4,230.48
326 - Plastics and Rubber Products Manufacturing	$ 191,849.09	$ 682,540.03	$ 3,689.41
327 - Non-Metallic Mineral Product Manufacturing	$ 84,274.54	$ 249,582.29	$ 1,620.66
331 - Primary Metal Manufacturing	$ 61,415.57	$ 117,713.18	$ 5,117.96
332 - Fabricated Metal Product Manufacturing	$ 367,466.93	$ 1,169,805.96	$ 2,174.36
333 - Machinery Manufacturing	$ 241,723.91	$ 560,750.40	$ 1,227.02
334 - Computer and Electronic Product Manufacturing	$ 307,871.84	$ 565,233.46	$ 2,405.25
335 - Electrical Equipment, Appliance and Component Manufacturing	$ 139,076.05	$ 257,632.68	$ 2,279.94
336 - Transportation Equipment Manufacturing	$ 517,597.96	$ 1,158,015.78	$ 8,772.85
337 - Furniture and Related Product Manufacturing	$ 268,073.28	$ 787,465.25	$ 2,094.32
339 - Miscellaneous Manufacturing	$ 122,668.83	$ 316,685.86	$ 625.86

Source: Derived from Statistics Canada, Canadian Business Patterns, December 2008 and June 2011, and Statistics Canada Principal Manufacturing Statistics, 2008 by Millier Dickinson Blais, 2011

iii. Manufacturing Associations

Canadian Manufacturers and Exporters (CME) is Canada's largest trade and industry association and the country's strongest advocate of manufacturing and exporting, CME celebrated its 140th anniversary in 2011. CME delivered the SMART program through FedDev Ontario. Over 50 York Region manufacturers received funding and innovation development benefits from the program. CME's members are Canada's leading manufacturing and exporting businesses. Together, they account for an estimated 82 per cent of Canada's manufacturing production and 90 per cent of Canadian goods and services exports. While CME's membership includes many of Canada's largest businesses, more than 85 per cent of their members are small and mid-sized enterprises. Through partnerships with other associations, CME's network extends to more than 100,000 companies from coast to coast, engaged in manufacturing, global business and service-related industries. CME participated in a York Region symposium in 2010 which led to the Innovation in Manufacturing Project.

Excellence in Manufacturing Consortium (EMC) is a manufacturing industry alliance, with more than 900 companies participating as active members. Operating through a network of 53 local chapters, EMC links companies into buying groups to reduce costs, provides local training and information gathering services, offers specialized assistance with energy and environmental issues, and delivers programs targeting specific sectors including the food and beverage sector. EMC has representation on the Innovation in Manufacturing Advisory Panel (www.emccanada.org)[38].

The Society of Manufacturing Engineers (SME) is the world's leading professional society advancing manufacturing knowledge and influencing more than half a million manufacturing practitioners annually. Through its local chapters, technical communities, publications, expositions and professional development resources, SME promotes an increased awareness of manufacturing engineering and keeps manufacturing professionals up to date on leading trends and technologies. Headquartered in Michigan, the Society has members in more than 70 countries and represents manufacturing practitioners across all industries.

iv. York Region Innovation in Manufacturing Advisory Panel Members

Names	Title	Organization
Jill Anderson	President	Aecometric Corporation/ Conamara Limited
Vern Cunningham	Owner	Alutron Modules
Steven Coates	President Engineering Manager	Better Motion Group Faurecia Automotive
Diana Harper	Senior Development Officer	Employment Ontario (EO)
Kevin McCormick	Field Advisor	Excellence in Manufacturing Consortium (EMC)
Dan Lynch	Industry Liaison Manager	Innovation York
Mark Baistrocchi	President	KAMM Industries Ltd.
Thomas Lorini	President	Novatec Machining Inc.
Jose Costa	Business Development Manager	Ontario Centre for Excellence (OCE)
Michael McNamara	Dean, Research & Scholarship	Seneca College, Office of Research and Innovation
Jeremy Laurin	President & CEO	ventureLAB
Al Wilson	Executive Director	The Workforce Planning Board of York Region and Bradford, West Gwillimbury
Lawrence Cotton	OYAP Coordinator	York Catholic District School Board
Doug Lindeblom	Director Economic Strategy	Regional Municipality of York
Paul Bottomley	Manager Growth Management, Economy & Information Research	Regional Municipality of York
Susan Bergman	IM Project Coordinator	Regional Municipality of York

v. York Region Manufacturers Participating in Productivity and Profit for Innovation Seminars

Over 66 businesses with over 100 staff, municipal economic development partners and innovation stakeholders attended the five "Productivity and Profit for Innovation" seminars in October 2011 sponsored by the Aurora, Newmarket, Richmond Hill, Vaughan Chambers of Commerce, the Markham Board of Trade, and ventureLAB. We appreciate their contribution to the Innovation in Manufacturing Project. Most of these organizations will sustain the York Region Project, which ends on March 31, 2012, through agreement to be members of the York Region Manufacturer Consortium. Documentation from the seminars including the Triavica and Ontario Centres of Excellence presentations is available on the Economic Strategy website (www.investinyork.ca).

Attendees included:

Able Communications
Acme Agriculture & Food Ltd.
Alma Consulting Group Canada
Almac Industrial Systems
Alutron Modules
Auco Manufacturing, Limited
Aurora Chamber of Commerce
Bloomsbury Fine Cabinetry
Bodycote Thermal Processing
Bosda International Inc.
Buchner Manufacturing Inc.
Cam Mac Tech
Clover Tool Manufacturing Ltd.
Ellis Studios
EMC Canada
Eurospec Manufacturing Inc.
Featherlite Industries Ltd.
Fraktals
Frank T Ross
Gemite Products Inc.
Griffin Realty Corp.
Heaven Fresh Canada Inc.
Industrial Research Assistance Program (IRAP)
Innovate York (York University)
InStill Wind Inc
Ivey Business School
Jancox Stampings
Lotek Wireless Inc.
Lumasonix
LYNX 87 LTD.
Markham Convergence Centre
Matias Corporation
Ministry of Economic Development and Innovation
Ministry of Training, Colleges and Universities (MTCU)
Mircom
Mr. Marble
Newmarket Chamber of Commerce
Ontario Centres of Excellence
OneCAD Solutions Ltd.
Pro-Esthetics Dental Lab.
Richmond Hill Chamber of Commerce
RDM TeleTech Management Group
Rubicon Food Products Ltd.
Samco Machinery
Seneca College
Shimifrez
SMTC Corporation
SolarScape Innovations Inc.
Sumit Products Inc.
TCE Group
Technodevelopment Inc.
The Regional Municipality of York, Economic Strategy
The Stewart Group
The WAN Group
Thermal Electronics Corp.
Tower Solutions Inc.
Town of Richmond Hill, Office of Economic Development
Triavica
Treasure Mills Inc.
TrendyMED Inc.
Vaughan Chamber of Commerce
Vecture Inc.
ventureLab
Virtual Engineers
WOLFEworks
Workforce Planning Board of York Region and Bradford West Gwillimbury

vi. Innovate in York – Manufacturing Conference

On December 6, 2011, the "Innovate in York Manufacturing Conference" brought together, for the first time, over 250 manufacturers to meet the York Region manufacturing value-chain and innovation ecosystem partners from York Region and beyond.

Keynote was Idris Mootee of Idea Couture. Idris presented Strategic Innovation and New Game Theory. Idris is a frequent keynote speaker at international conferences around the world and author of several books (in many languages) on strategic innovation and design thinking. With more than 25 years of deep strategy experience spanning across three continents, Idris partners with clients in all sectors to develop strategic foresights, identify their highest-value innovation opportunities, address their most critical challenges, explore strategic options and develop breakthrough ideas. The process is arguably the most enduring innovation that represents the kind of interdisciplinary collaboration and design thinking that Idea Couture is built upon. He is currently Lecturer at Harvard and Program Leader of the Design Thinking for Business Innovation.

A successful serial entrepreneur, prior to co-founding Idea Couture, Idris was Global Chief Strategist of Blast Radius (WPP), Global Head of Strategy for Organic (Omnicom), co-founder and Chief Strategy Officer of Live Lowe and Partners (Interpublic), and Chief Strategist with CBIZ e-solutions (CBIZ). Idris holds Masters Degrees in Management from London Business School and in Technology Management from Brunel University Graduate School as well as completed advanced management education at Ivey Business School and Harvard Business School.

Idris received the most innovative award in 2010 from The Chinese Canadian Entrepreneur Awards which are hosted by the Association of Chinese Canadian Entrepreneurs in association with The Centre of Entrepreneurship of Centennial College, Ontario Ministry of Economic Development and Innovation, Pricewaterhouse Coopers and Ming Pao Daily News. Idris resides in Richmond Hill.

Welcome Remarks

- City of Vaughan, Deputy Mayor Gino Rosati
- Regional Municipality of York, Doug Lindeblom
- Ministry of Training Colleges and Universities, Diana Harper

The Manufacturing Innovation Panel facilitated by ventureLAB, highlighted the challenges of innovation from successful York Region manufacturers and included:

- Alutron Modules of Aurora, Vern Cunningham
- Seneca College, Christine Bradaric-Baus
- SMTC Corporation of Markham, Brian Morrison
- Vecture Inc. of Vaughan, Angelo Catenaro
- ventureLAB, Jeremy Laurin (moderator)

Brock Dickison of Millier Dickinson Blais discussed "Innovate York: Guide for York Region Manufacturers", to be released on www.investinyork.ca in January 2012.

The Innovation Resources Panel facilitated by Mitch Silverstein, SBLR LLP Chartered Accountants, addressed assistance to manufacturers toward their innovation goals. Panelists included:

- Canada Revenue Agency (SR&ED), Lynda Sturgeof
- National Angel Capital Organization, Andrew Wilkes
- Mitacs, Samantha Reid
- NRC-IRAP, Angelo Deluca
- SBLR Chartered Accountants, Mitch Silverstein (moderator)

vii. Innovate in York – Manufacturing Conference Participants

A.B.S. Aluminum Inc.	Concord
A.S. Chemical Laboratories Inc.	Concord
Ability Fabricators Inc.	Vaughan
Able Communications	Markham
Acme Agriculture & Food Ltd.	Vaughan
Advanced Solutions	Woodbridge
Aecometric Corporation	Richmond Hill
Agile Manufacturing, Inc.	Uxbridge
All Waste Removal	York Region
Allspar Solutions Inc.	Concord
Allwood Products Ltd.	Concord
Alma Consulting Group Canada	Vaughan
Almac Industrial Systems	Aurora
Almo Technologies Inc.	Richmond Hill
Alutron Modules Inc.	Aurora
ALX Technical	Richmond Hill
Antonini Drapery	Concord
Asia Marble & Granite Ltd.	Concord
Astra Packaging	Markham
Auco Manufacturing, Limited	Scarborough
Aurora Chamber of Commerce	Aurora
Austen Barnes Advanced Tech.	Queensville
BC Instruments	Schomberg
Beaver Valley Stone	Thornhill
Bena Fastenings Inc.	Woodbridge
Better Motion Group	Aurora
BioApex Diagnostic Inc.	Richmond Hill
Bitel Limited	Markham
Blackstock Leather	Stouffville
Blower Engineering	Aurora
BMO	Toronto
Bodycote Thermal Processing	Newmarket
Bosda International Inc.	Markham
Brado Precision Machine & Tool	Concord
Brothers Printing & Design Inc.	Concord
Butler & Baird Limited	Stouffville
Caledonia Plastics Inc.	Concord
Canada Base Co.	Woodbridge
Canada Revenue Agency (SR&ED)	Toronto
Canada Tools and Moulding Supplies Inc.	Richmond Hill
Canadian Custom Wood Mouldings	Stouffville
Canadian Machine Tools	Woodbridge
Canadian Thermo Windows	Woodbridge
Cancard Inc.	Markham
Central Casting	Richmond Hill
Chocolate Concepts Inc.	Vaughan
City of Vaughan	Vaughan
CLC Products Inc.	Richmond Hill
Clean Air Technologies	Concord
Coaching for Action Inc.	Thornhill & Toronto
Concena Corporation	Newmarket
Concord Aluminum Railings	Concord
Concord Hard Chrome	Concord
Concreation Canada Inc.	Concord
Cranson Capital	Toronto
Crystal Jewellers	Stouffville
Crystal Sensations	Markham
Cygnus Electronics Corp.	York Region
D.L. Custom Ltd.	Markham
Davidson Furniture Specialties Ltd.	Markham
Design Source Industries	Concord
Dishon Limited	Vaughan
DNS Display Industries Inc.	Concord
Dome Packaging	Gormley
Door Components Canada	Vaughan
Drive Medical Canada	Richmond Hill
Durham College	Whitby
Dyad Infosys Ltd.	Toronto
Eco Wood Products	York Region
Ellis Studios Ltd.	Aurora
ELM's Engineering Inc.	York Region
Engineered Air	Newmarket
Engineered Awareness	Toronto
Ensil Canada Ltd.	Markham
EnviroServe Chemicals & Cleaners Ltd.	Vaughan
Eurospec Manufacturing Inc.	Newmarket
Excellence in Manufacturing Corp.	Barrie
Exco Engineering	Newmarket
Finland Innovation Development	Burlington
Fotiou Frames Limited	Woodbridge
Gemite Products Inc.	Mississauga
Griffin Realty Corp.	Newmarket
HPN Engineering	Vaughan
Idea Couture	Toronto
Illumiti Inc.	Richmond Hill
Impact Cases Inc.	Markham
InkPrint Design House	Newmarket
Innovation York (York University)	Markham
Innovative Hydrogen Solutions	Newmarket
Inscape Holland Landing	
InStill Wind Inc.	Pickering
ITL Circuits	Markham
ITS Electronics Inc.	Concord

JAFtech Manufacturing Ltd.	Newmarket
Jayar Die & Design Ltd.	Vaughan
Jet Ice Ltd.	Newmarket
Kwik Kopy	Richmond Hill
Lafarge Canada Inc.	Vaughan
Leather Treaty	Concord
LMI Canada	Mississauga
Lumasonix	North York
M.I.S. Electronics Inc.	Richmond Hill
Macfarlane Nameplate	Toronto
Markham Board of Trade	Markham
Marriott Hotels	Vaughan
Master Auto Supply Co. Ltd.	Richmond Hill
Matias Corporation	Newmarket
Meister Inc.	Newmarket
Millier Dickinson Blais	Toronto
Ministry of Economic Development and Innovation	Toronto
Ministry of Training, Colleges and Universities	Markham
Mitacs	Toronto
National Angel Capital Organization	Toronto
National Research Council - IRAP	Markham
Newmarket Chamber of Commerce	Newmarket
Newmarket School of Fine Art	Concord & Newmarket
NGI Designer Glass Inc.	Thornhill
Noanda Enterprises Ltd.	Vaughan
Novatec Machining Inc.	Woodbridge
NTHION Corp.	Toronto
OCAD University	Markham
Ontario Centres of Excellence	Markham
Ove Industrial Design Ltd.	Toronto
Paragon Furniture Manufacturing	North York
Paragon Systems	Concord
People's Insurance Co. Ltd.	Richmond Hill
PHCP Incorporated	Mississauga
PowerOn Control Systems	Concord
Process In Motion Inc.	Richmond Hill
RBC Royal Bank	Vaughan
RDM TeleTech Management Group	Newmarket
Red Scarf Equestrian	East Gwillimbury
RGDI	Brampton
RGP Printers	Markham
Richmond Hill Chamber of Commerce	Richmond Hill
ROCG	Newmarket
Rolltec Rolling Systems Ltd.	Concord
Royal Lepage	Toronto
Royal Mould Technologies Ltd.	Scarborough
Sable Metal	Markham
Sartrex Power Control Systems	Concord
SBLR LLP Chartered Accountants	Toronto
Schleese Saddlery Service Ltd.	Holland Landing
Scotiabank	Markham
Seneca College	Markham & Toronto
Servetronics Manufacturing	Richmond Hill
Sharpco Canada Ltd.	Concord
Shimifrez	Concord
ShuttleSpace	Toronto
Sigma Eight Inc.	Newmarket
Signature Plastics Ltd.	Concord
SMTC Corporation	Markham
Society of Manufacturing Engineers (SME)	Markham
Sonny Sports Ltd.	Vaughan
Southwire Company	Stouffville
SP Marble Inc.	Concord & Stouffville
Spark Innovations	King City
SpeakEasy	Richmond Hill
Spot's Closet Corp.	Oakville
Steam Engineering	Aurora
STIM Canada Inc.	Toronto
TCE Group	Markham
Techno Scientific Inc.	Concord
Technodevelopment Inc.	Scarborough
The Exhibit Team Canada Inc.	Newmarket
The Mezzanine Group	Toronto
The Regional Municipality of York	Newmarket
Toronto Region Research Alliance	Toronto
Town of Aurora	Aurora
Town of East Gwillimbury	East Gwillimbury
Town of Georgina	Georgina
Town of Markham	Markham
Town of Newmarket	Newmarket
Town of Richmond Hill	Richmond Hill
Township of King	King Township
Triavica	Markham
Util Canada	Concord
Vaughan Chamber of Commerce	Vaughan
Vecture Inc.	Concord
ventureLAB	Markham
Virtual Dog Inc.	Markham
Workforce Planning Board	Newmarket
York Catholic District School Board	Aurora & Thornhill
York Region Environmental Alliance	Toronto
York University (Innovation York)	Markham

Endnotes

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