



# TAKING ACTION ON SKILLED TRADES

*Establishing the Business Case for  
Investing in Apprenticeship*

Report from the  
*Ontario Chamber of Commerce*

SEPTEMBER 2005

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Dear Stakeholders:

The current education and training system in Ontario is not producing enough skilled trades workers to meet current industry demand, and this shortage will impede Ontario's businesses' ability to compete, grow and prosper.

Using the province's manufacturing sector as an illustration, the Ontario Chamber of Commerce has developed the business case for investing in apprenticeship training. This report, *Taking Action on Skilled Trades: Establishing the Business Case for Investing in Apprenticeship*, quantifies, for the first time, the return on apprenticeship training investment. Our research established that there is a 430 per cent return on apprenticeship training investment waiting to be realized in Ontario's manufacturing industry.

Business and government must recognize that apprenticeship is an investment in Ontario's economy.

Each stakeholder has a significant role to play in ensuring that the number of apprentices and skilled trades workers in Ontario markedly increases. First, all stakeholders must recognize apprenticeship as the third pillar to Ontario's postsecondary education system and understand that apprenticeship is an investment in Ontario. Government must continue to support and fund Ontario's education and training system while at the same time, continue to offer financial incentives to businesses so they will take on more apprentices; business must invest in apprenticeship training; educators, guidance counsellors and parents need to communicate each of the three pillars of the postsecondary education system to students as they make choices about their career destinations; and students must understand careers in skilled trades are desirable career choices.

The Ontario Chamber of Commerce conducted a Skilled Trades Workshop to engage in a meaningful and solutions-based dialogue on how to combat the province's skilled trades shortage. Nearly 100 delegates and speakers from government, business and education attended the workshop to assist in collectively identify solutions to remove the barriers to apprenticeship training in Ontario and seek ways to enhance the image of skilled trades. The workshop was held at Hamilton's Mohawk College of Applied Arts & Technology in November 2004.

The recommendations contained within this report have been derived from the workshop findings, OCC policy, member survey results and additional research. Common themes and priorities have been identified with cost, poaching and awareness as the top three.

The final long-term goal of this initiative is to change the behaviour of key stakeholder groups; influence provincial policy; collectively and individually commit to a strategy to improve awareness of skilled trades professions; and increase the number of skilled trades workers and apprentices in Ontario.

The Ontario Chamber of Commerce greatly appreciates and values the input, assistance, time and support provided by its Education Committee in preparing this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Len Crispino', with a stylized flourish extending to the right.

Len Crispino  
President and CEO  
Ontario Chamber of Commerce

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# EXECUTIVE SUMMARY

## Background

The current education and training system in Ontario is not producing enough skilled trades workers to meet current industry demand. If this shortage is not addressed it will impede Ontario businesses' ability to compete and grow, hurting our province's competitiveness and economy.

The Ontario Chamber of Commerce conducted a Skilled Trades Workshop to engage in a meaningful and solutions-based dialogue on how to combat the skilled trades shortage in Ontario. Nearly 100 delegates and speakers from government, business and education attended the workshop held at the Stoney Creek campus of Mohawk College of Applied Arts & Technology in November 2004, to identify solutions to overcome barriers to training and ways to enhance the image of skilled trades.

The recommendations contained within this report have been derived from the workshop findings, OCC policy and member survey results as well as additional research. The top three common themes and priorities that have emerged are: cost, “poaching” and awareness.

Combating the growing skilled trades shortage in Ontario is a complicated issue that cannot be solved by one stakeholder alone or by addressing one issue alone. Addressing apprenticeship and skilled trades in Ontario is a large puzzle where each element (e.g., cost of training, “poaching”, raising awareness, government funding, etc.) is just as important to address as the next. For example, “poaching” cannot be dealt with on its own without addressing the issue of investment and funding for apprenticeship; and investments will not be made unless there is demand for skilled trades professions, which requires an attitudinal change and an increase of awareness, and so on. In order to effectively combat the province's growing skilled trades labour shortage, all stakeholders must work together to address each of these inter-locking issues.

The majority of this report focuses on the top three issues raised by workshop delegates: cost of apprenticeship training, “poaching,” and awareness.

For the purposes of this report, Ontario's manufacturing sector has been used as an illustration to develop the business case for investing in apprenticeship training. However, the skilled trades shortage is not limited to Ontario's manufacturing industry, in fact it is affecting numerous other industries including construction, mining, metal, machining and others.

## Business Case for Investing in Apprenticeship Training

One of the key themes identified at the OCC Skilled Trades Workshop is the importance of business and government recognizing that apprenticeship is an investment in Ontario's economy. Until now, research has been slow in Canada to evaluate the return on investment of apprenticeship training. Based on the Ontario Chamber of Commerce's research, investing in apprentices has a positive return on investment to employers, and to the province's economy, in the form of improved competitiveness and productivity.

Based on our research, Ontario will face a shortage of about 100,000 skilled trades workers in the manufacturing sector over the next 15 years, due to retirement. This report identifies the return on investment of apprenticeship training, as well as the potential economic losses that would accrue to business and government should the status quo remain in this sector; in other words, not replacing these retiring workers and allowing the expected skilled manufacturing trades shortage to persist.

The Ontario Chamber of Commerce has identified a 430 per cent return on investment of apprenticeship training. That is, for every one dollar invested in training a manufacturing apprentice, there is a \$4.30 return on that investment.

If these 100,000 retiring skilled manufacturing employees are not replaced, over the next 15 years the provincial and federal governments would stand to lose between \$1.2 billion and \$1.3 billion in combined taxation revenue. That is about \$82 million per year in lost tax revenue from the manufacturing sector alone almost enough to train 650 tool and die makers per year over the next 15 years. The impact to Ontario's economy will be the cumulative loss of some \$43 billion by 2020. To prevent this potential loss, business and government need to invest \$10 billion to train another 100,000 workers in the skilled trades, just to offset the loss from retirements.

### “Poaching”

Though the cost of training was cited as the most critical barrier to investing in apprenticeship, employers are also very concerned with the issue of “poaching” where one company hires a trained or partially trained employee from another company.

“Poaching” occurs simply because there are not enough skilled trades workers available to meet demand. This issue will undeniably continue unless the number of skilled trades workers increases considerably over the next 10-20 years.

The high cost of apprenticeship training is a key deterrent for employers to take on additional apprentices, and coupled with the negative image from which skilled trades professions suffer, supply will continue to remain low.

### Increasing Supply and Meeting Demand for Apprentices

Meeting the demand for apprentices and skilled trades workers requires a multi-faceted approach, but first, all stakeholders must acknowledge and recognize that apprenticeship training is the third pillar of Ontario's postsecondary education system.

Several recommendations have been made in this report to increase awareness of skilled trades professions in Ontario. A key element to increasing awareness is to launch two separate province-wide multi-stakeholder marketing campaigns. The first, targeted to students, parents and future apprentices, would highlight the benefits of careers in skilled trades. The second would be targeted to employers on the benefit of hiring an apprentice and investing in apprenticeship training. All stakeholders must convey a strong, clear and concise message that “investing in apprenticeship is an investment in the Ontario economy.”

Ontario colleges represent a unique role in being able to offer a clear pathway to becoming an apprentice and are key partners in apprenticeship training. Since Ontario's college sector already delivers 90 per cent of apprenticeship training it would be a wise investment to designate this as the primary pathway to apprenticeship.

At the secondary school level, the provincial government must enhance funding for technological education in Ontario's elementary and secondary curriculum. Furthermore, in-school presentations

on skilled trades should be mandatory for students, teachers, trustees, and guidance councillors to increase awareness and understanding about apprenticeship and skilled trades professions.

Eliminating barriers for internationally-trained skilled trades workers is essential to enhancing Ontario's workforce and to combat the skilled trades shortage in Ontario. It is important that government continue to support programs that allow foreign trained workers to be recertified in their specific field, and to find gainful employment within Ontario. In addition, the provincial and federal governments should also work together to sign the long awaited Labour Market Development Agreement for Ontario as soon as possible.

Students, colleges and employers say that the current structure of the apprenticeship system requires improvement and change to make it easier and more efficient to navigate successfully through the required steps of entering an apprenticeship program. Unfortunately, there is no clear path for apprenticeship as with careers in medicine or the law. Stakeholders should work with the government to develop a single information clearinghouse or an online portal for apprenticeship information. It is important and more efficient for all resource links to be collected on one specific site and promoted to a wider audience.

## Conclusion

The final long-term goal of this initiative is to change the behaviour of key stakeholder groups, influence public policy, and collectively and individually commit to a strategy to improve awareness of skilled trades professions to increase the number of skilled trades workers and apprentices in Ontario.

This is an ongoing issue requiring the support of and collective action from all stakeholders.

# BUSINESS CASE FOR INVESTING IN APPRENTICESHIP

## Ontario's Manufacturing Sector

There is a mounting skilled trades shortage in Ontario as a growing number of skilled trades workers are retiring, or preparing to retire, over the next 15 years. Coupled with this significant outflow of retirees, there is only a minimal number of students entering apprenticeship, severely widening this skills gap.

Overall, in the Ontario labour force, the number of retirees will exceed the number of new entrants sometime between 2011 and 2016.<sup>1</sup> There is a significant gap between the number of students entering apprenticeship training programs versus university as their postsecondary education options. According to Statistics Canada, university attainment at the national level has grown by 32.9 per cent from 1991 to 2001, representing a nearly 50 per cent contribution to labour force growth for the same period. This compares to negative growth of 3.8 per cent for apprenticeship training, representing a negative 3.7 per cent contribution to labour force growth for the same period.<sup>2</sup> The gap is continuing to widen as more baby boomers retire.

### Skills Shortage – Stats At A Glance

- 45% of all **steel** tradespersons are expected to retire by 2006 (careersintrades.ca)
- 50,000 skilled **metal** trades people will be needed in the next five years (Canadian Tooling and Machining Industry)
- Over the next 10 years, Canada's **mining** industry will be short 81,000 employees (Mining Industry Training and Adjustment Council)
- Canada's **automotive** industry will need 30,000 new skilled workers by 2005, due to retirements (Automotive Parts Manufacturing Association)
- A study by the APMA predicts a shortage of 14,468 **machining** industry jobs over the next 10 years (Skills Canada)
- Local 183 (largest **construction** local in North America) could lose between 5,000 and 7,000 workers out of its 24,000 members over the next five years due to retirement (Apprenticesearch.com); It is estimate that the shortage of workers in Canada's construction industry is between 35,000 and 60,000 workers (Skills Canada).
- In the **manufacturing** sector, there is an estimated 400,000 workers required in the next 15 years due to retirement (Canadian Labour and Business, 2004 and the Canadian Manufacturers and Exporters, 2005)
- Between 18,000 and 19,000 new jobs will be created within the next five years in the **collision** industry (Canadian Collision Industry Forum)
- Canada is already short between 25,000 and 60,000 workers (Canadian Construction Association)
- In the next two decades, 40% of new jobs will be in the skilled trades and technologies. In 1998, that number was less than 20% (skillswork.com)
- By 2007, more than one-third of jobs created in Canada will require a skilled trade designation or a college diploma (Job Futures 2000, skillswork.com)
- By 2020, it is estimated that Canada could be short about one million workers (Conference Board of Canada, 2000)

Figure 1: Skills Shortage - Stats At A Glance

<sup>1</sup>Auto Parts Manufacturing Association, "Automotive Parts Manufacturing Industry Demographic Statistics Overview." www.apma.ca

<sup>2</sup>Statistics Canada, "Occupational skill groups by sex, Canada, 1991, 1996 and 2001." www.statcan.ca.

This skilled trades shortage is not limited to Ontario's manufacturing industry. In fact, it is affecting numerous other industries including construction, mining, metal, machining and many others (Fig. 1).

The cost barrier to apprenticeship training was the key issue that was raised most often by OCC Skilled Trades Workshop delegates, as it is viewed to be a significant barrier to investing in apprenticeship. To combat this barrier, employers must be made aware of the positive return on investment that apprenticeship training has on company performance. This particular finding from the workshop indicated that more research is needed to fully understand the implications of the cost of apprenticeship training and in turn, how the return on that investment affects the Ontario economy.

Investing in apprenticeship training results in higher taxation revenue for government; increased productivity for employers; and overall, it benefits the province with an increase in real output, or Gross Domestic Product (GDP). Using Ontario's manufacturing sector as an illustration, we have developed a positive business case for investing in apprenticeship training. This business case identifies the return on investing for apprenticeship training, as well as identifying potential economic losses that would accrue to business and government should the manufacturing skills shortage be allowed to persist.

Investing in apprenticeship training results in higher taxation revenue, enhanced productivity and company performance, and an increase in GDP.

Manufacturing is Canada's single largest business sector, of which every dollar of its output generates \$3.05 in total economic activity.<sup>3</sup> According to Statistics Canada, 18 per cent of the province's jobs are in the manufacturing sector, while the Ministry of Economic Development and Trade, reports its revenue accounts for 21 per cent of the province's wealth.<sup>4</sup>

A detailed overview and analysis of Ontario's manufacturing sector is contained in Appendix I.

### Definition of “Skilled” Occupation

For the purpose of this report, “skilled” occupations are defined based on Human Resources Development Canada's (HRDC) grading skill level system (Appendix I, Fig. 11).<sup>5</sup>

<sup>3</sup>Canadian Manufacturers & Exporters. “Will 'Made in Canada' Be a Thing of the Past? Manufacturers Change or Perish. May 2004. <http://www.cme-mec.ca/bc/media.asp?id=32>.

<sup>4</sup>18% manufacturing employment figure from the “Overview of Ontario's Employment Patterns,” Ontario Job Futures. Human Resources Development Canada; 21% manufacturing GDP figure from Ministry of Economic Development and Trade, 2ontario.com (<http://www.2ontario.com/facts/fact02.asp>)

<sup>5</sup>“Overview of Ontario's Employment Patterns,” Ontario Job Futures. Human Resources Development Canada.

## Ontario's Manufacturing Industry - Occupational Grouping

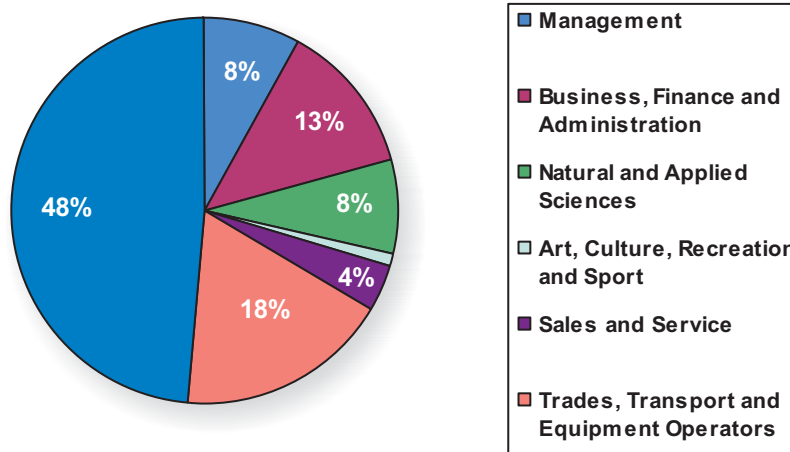


Figure 2: Ontario's Manufacturing Industry - Occupational Grouping

### Expected Manufacturing Skills Shortage

According to Canadian Labour and Business (CLB) and the Canadian Manufacturers and Exporters (CME), Canada will have to fill 400,000 manufacturing jobs to replace that number of retiring workers over the next fifteen years.<sup>6</sup>

Since Ontario represents 48 per cent of Canada's manufacturing employment, the above figure (400,000) has been revised to reflect Ontario's share of the industry. Based on the CLB/CME estimate, Ontario will require 192,000 manufacturing workers over the next 15 years due to retirement.<sup>7</sup>

Based on current data, approximately 49-52 per cent of manufacturing jobs are filled by skilled workers (Appendix I, Fig. 14).<sup>8</sup> That translates into a range of 94,000-100,000 job vacancies that will result from skilled workers retiring over the next fifteen years.

Ontario will face a shortage of about 100,000 skilled trades workers in the manufacturing sector in the next 15 years.

<sup>6</sup> <http://www.careersintrades.ca/media/default.asp?load=fact01>

<sup>7</sup> To determine Ontario's share of Canada's manufacturing employees we divide Ontario manufacturing employees by Canada's manufacturing employees, based on 2004 figures provided by Statistics Canada. Therefore,  $1,109,000 / 2,297,000 = 0.48 = 48\%$   
Source: <http://www40.statcan.ca/01/cst01/labor21b.htm>.

<sup>8</sup> The low range (49%) is based on the share of skilled workers in total employment as referenced in "The Impact of International Trade on the Wages of Canadians," page 14. Statistics Canada. <http://www.statcan.ca/english/research/11F0019MIE/11F0019MIE2001156.pdf>. The high range (52%) is based on Ontario's proportion of "skilled" versus "unskilled" workers in Ontario's manufacturing sector as determined by the Ontario Chamber of Commerce (Appendix I, Fig. 14).

## Effect on Government Taxation Revenue

Such a shortage of skilled jobs will result in the cumulative or total loss of \$1.2 billion and \$1.3 billion in taxation revenue to the provincial and federal governments.<sup>9</sup> That is about \$82 million per year in lost taxation revenue from the manufacturing sector alone – almost enough to train 650 tool and die makers per year over the next 15 years.<sup>10</sup>

## Effect on the Ontario Economy

There are currently over one million people employed in Ontario's manufacturing sector who produced over \$99 billion in manufacturing GDP in 2004.<sup>11</sup> As noted, some 8.5 to 9 per cent of that workforce, or 94,000 to 100,000 people, are expected to retire over the next 15 years.<sup>12</sup> Assuming one unit of labour equals one unit of output, then Ontario's current manufacturing employment equals Ontario's current manufacturing GDP. Therefore, if that sector's employment is reduced by 8.5 to 9 per cent, then Ontario's manufacturing output will consequently drop 8.5 to 9 per cent over the next 15 years (assuming productivity remains constant over this period of time). Such a loss translates into a drop in GDP by 2020 of \$8.4 billion to \$9 billion, depending on the size of skilled trades shortage in Ontario's manufacturing sector. Manufacturing output will gradually decline from \$99 billion in 2005 (assuming no change from 2004 GDP) to about \$90 billion by 2020. Should Ontario lose the full 100,000 workers, the net present value of the total manufacturing production lost due to these retired workers is \$43 billion.<sup>13</sup>

If we do not replace the 100,000 retiring manufacturing skilled trades workers, the Ontario economy will lose \$43 billion between now and 2020.

<sup>9</sup> Average manufacturing wage is \$20.37 per hour \* times a 40 hour work week = \$814.80 weekly manufacturing earnings times a 50 week work year = \$40,740 annual income times a 31% personal income tax rate = \$12,630 annual income tax owing. \*\* Individual taxes owing of \$12,630 times low range of 94,000 required workers = \$1,187,220,000 and times high range of 100,000 required workers = \$1,263,000,000.

\* Source: Government of Ontario. [http://www.2ontario.com/welcome/oolf\\_309.asp](http://www.2ontario.com/welcome/oolf_309.asp).

\*\* The Ontario Chamber of Commerce acknowledges that this is a very simple example which does not take into consideration all of the variables in calculating personal income taxes. However, it is an important to illustrate that if the status quo remains (i.e., to do nothing and not replace the retiring skilled workers in Ontario's manufacturing sector), the government will lose a portion of its taxation revenue as skilled manufacturing employees have a high earning power and contribute significantly to government revenue.

<sup>10</sup> According to an HRDC study entitled "The Cost of Apprenticeship Borne by Employers," conducted by R.J. Sparks Consulting Inc. and WGW Services Ltd., it costs \$125,910 over a four-year period to train one tool and die maker. Available from the Canadian Tooling and Machining Association at <http://www.ctma.com/Presentation%20to%20HOC%20Standing%20Committee%20-%20Nov%202002.pdf>.

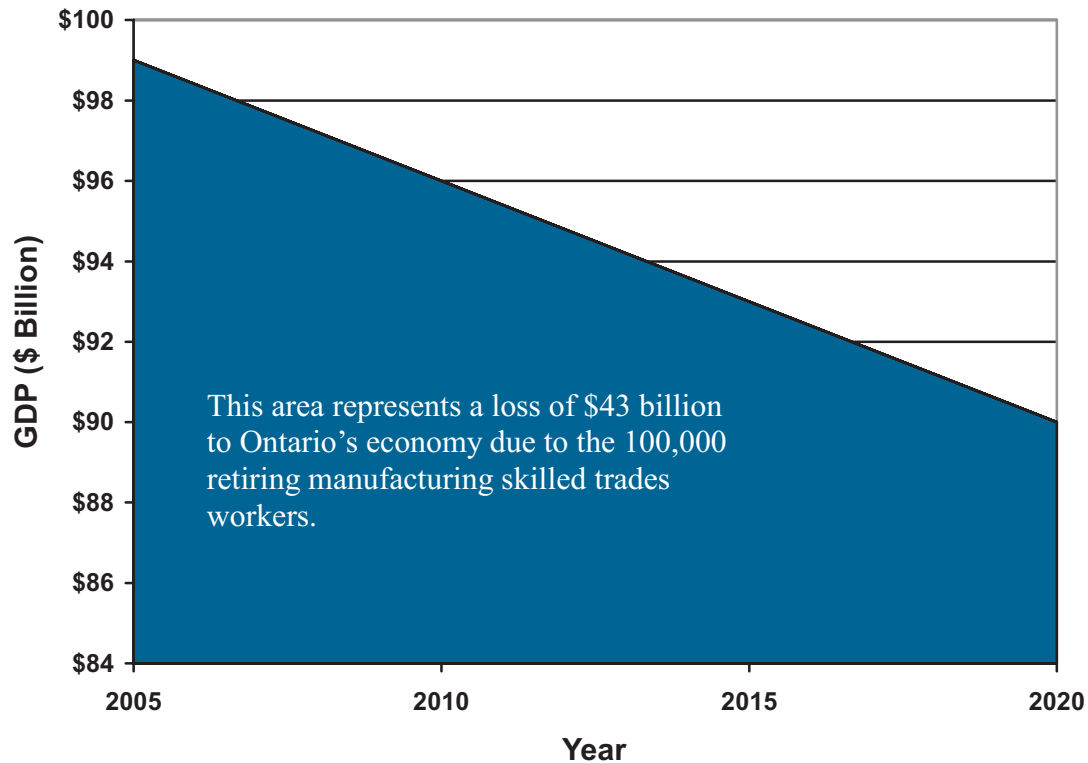
<sup>11</sup> Statistics Canada, May 2005. [www.statcan.ca](http://www.statcan.ca).

<sup>12</sup> Low range: 94,000 divided by 1,109,000 (Ontario manufacturing employees, Statistics Canada) = 8.5%

High range: 100,000 divided by 1,109,000 (Ontario manufacturing employees, Statistics Canada) = 9%

<sup>13</sup> The calculation for the total production lost due to retired workers over the next 15 years is based on calculating the cumulative lost production over the 15 years: i.e. manufacturing GDP gradually declines from \$99B to \$90B in 2020 (GDP \* 15%). Reduction = (\$9B \* 15 years) / 2 (to calculate the cumulative total) = \$67.5B. To calculate the Net Present Value of the total lost production: \$67.5B / (1.03 discount rate)<sup>15</sup> (number of years) = \$43 billion Net Present Value

**Ontario's Projected Manufacturing GDP, 2005 - 2020**



**Figure 3: Ontario's Projected Manufacturing GDP, 2005-2020**

### Return on Apprenticeship Training Investment

Business and government must begin to invest in apprenticeship training to replace the 94,000 to 100,000 retiring manufacturing skilled trades workers.

The financial cost of training an apprentice is substantial. A third-party study entitled “The Cost of Apprenticeship Borne by Employers,” [HRDC Study] estimated that the net cost to an employer for training a tool and die apprentice is \$125,910 over a four-year period.<sup>14</sup> Based on this figure, our general assumption is that it will cost an average of \$100,000 to train a manufacturing skilled worker, regardless of occupation, over a four-year period. Therefore, to replace the 100,000 retiring workers will require a \$10 billion investment in apprenticeship training over the next 15 years. On the other hand, to do nothing would cost the Ontario economy over \$40 billion in lost manufacturing output.

<sup>14</sup> Report conducted by R.J. Sparks Consulting Inc. and WGW Services Ltd., and initiated and funded by Human Resources Development Canada.

This \$10 billion investment represents a \$4.30 return on each dollar spent on manufacturing apprenticeship training. In other words, a \$10 billion investment will yield a 430 per cent return on investment from apprenticeship training, just to maintain the status quo (this does not include feeding the growth potential of Ontario's manufacturing industry).<sup>15</sup>

**A \$10 billion investment in apprenticeship training represents a 430% return on investment just to maintain the status quo of Ontario's manufacturing sector.**

Canada will see a significant outflow of older workers from the labour market as the first baby boomers approach age 63 in 2010. What's more, workers in Ontario generally retire at a younger age than in the past. The median retirement age in the manufacturing sector is 59.8 years of age, and since it can take four to five years to train an apprentice, business and government must focus on establishing training programs to avoid any significant gaps in Ontario's manufacturing production.<sup>16</sup>

The 2005 Ontario Budget announced the governments' Reaching Higher plan which will provide Ontario with \$6.2 billion in new cumulative investments for postsecondary education and training by 2009-10. Of that, training and apprenticeship will receive a cumulative total investment of \$366 million over 2004-05 base funding. Most recently, the Ontario government announced an additional \$13.6 million investment to create 1,000 additional skilled trades training spaces under the government's Co-op Diploma Apprenticeship Program.<sup>17</sup> Though these are both positive steps, they fall short of the level needed to replace Ontario's retiring manufacturing skilled trades workers. Both government and business must invest more time, money and energy in apprenticeship training.

<sup>15</sup> To calculate the return on investment (ROI) of apprenticeship training, output is divided by input = \$43 billion manufacturing GDP divided by \$10 billion investment in apprenticeship training yields a 4.3 return on a dollar, or a 430% ROI.

<sup>16</sup> Automotive Parts Manufacturers' Association. "Automotive Parts Manufacturing Industry Demographic Statistics Overview," June 2003. [http://www.apma.ca/client/APMA/apma.nsf/object/HR+demographic+stats/\\$file/demographic+stats.PDF](http://www.apma.ca/client/APMA/apma.nsf/object/HR+demographic+stats/$file/demographic+stats.PDF).

<sup>17</sup> Ontario Government. "McGuinty Opens Door to 1,000 New Apprentices," August 26, 2005. [http://ogov.newswire.ca/ontario/GPOE/2005/08/26/c3300.html?lmatch=&lang=\\_e.html](http://ogov.newswire.ca/ontario/GPOE/2005/08/26/c3300.html?lmatch=&lang=_e.html).

## Training Incentives

Government tax credits can be an important incentive for businesses to take on the cost of hiring and training additional apprentices.

The Canadian government invests less in cost-sharing apprenticeship training incentives than the United States. Public expenditures for government cost-sharing training incentives in the US are estimated to be US\$1.2 billion, or US\$9.60 per employed worker; compared to Canada's corresponding expenditures of \$70.5 million, or \$5.40 per employed worker.<sup>18</sup>

The Ontario Chamber of Commerce recognizes that the provincial government has recently introduced the Apprenticeship Training Tax Credit (ATTC), but workshop delegates believe that it does not go far enough. The Apprenticeship Training Tax Credit represents about 12 per cent of the full cost of training an apprentice.<sup>19</sup> Many delegates recommended that more needs to be done and more trades should be designated under the ATTC, including those in the service industries. The Ontario government must offer additional financial support to employers who train apprentices.

The Apprenticeship Training Tax Credit represents 12% of the cost of training an apprentice.

### Recommended Government Action

**Increase the Apprenticeship Training Tax Credit and the number of trades allowed to include more service industries.**

Furthermore, workshop delegates suggested that tax incentives should also be offered to journey persons to encourage them to trade and mentor apprentices. For example, in Quebec, both employers and apprentices are recognized and offered a tax incentive for apprenticeship training. Quebec employers whose total payroll is \$1 million or more must invest at least one per cent of their total payroll in employee training.<sup>20</sup> Quebec's Workplace Apprenticeship Program recognizes apprentices by providing them with a professional qualification certificate upon completion of their training. A journey person who supervises an apprentice for a year can also get a professional qualification certificate, and employers may receive a tax credit that will allow them to finance a portion of the training expenses incurred through participation in the Qualification Plan.<sup>21</sup>

<sup>18</sup> Walraven, Jack Van. "Skills Research Initiative." Human Resources and Skills Development Canada / Industry Canada / Social Sciences and Humanities Research. Working Paper 2005 B-03. NB: Figures exclude subsidies to apprenticeship training.

<sup>19</sup> Ontario Apprenticeship Training Tax Credit, [www.2ontario.com](http://www.2ontario.com). Corporations are eligible for a 25% refundable tax credit on eligible expenditures incurred with respect to eligible apprentices. For businesses with total payroll costs not exceeding \$400,000, the tax credit rate is increased to 30 per cent. An employer is eligible for a tax credit of up to \$5,000 per year per eligible apprentice to a maximum of \$15,000 over the first 36 months of the apprenticeship. The maximum annual tax credit of \$5,000 is pro-rated for the number of days the apprentice is employed with that employer during the year. Calculation: \$15,000 maximum / \$125,000 average cost for training = 12%.

<sup>20</sup> Emploi-Quebec. 1% Training Investment. Online at <http://emploi-quebec.net/anglais/index.htm>

<sup>21</sup> Emploi Quebec. "Workplace Apprenticeship Program," <http://emploi-quebec.net/anglais/individus/qualification/apprentissage.htm>.

#### **Recommended Government Action**

**Offer other types of financial and/or tax rebates or incentives to encourage both employers to train apprentices and journey persons to train and mentor apprentices. Offer a tax credit to apprentices upon completion of their apprenticeship training (i.e., Certification of Qualification).**

#### **In Summary**

It is important to recognize that if serious action is not taken by all stakeholders to mitigate Ontario's impending skilled trades shortage, the province's economy will suffer negative effects in the coming years.

The message is clear apprenticeship training pays. It is a lucrative profession for employees but more importantly, it represents a significant investment in Ontario's economy. We must increase communication efforts and engage in a multi-stakeholder province-wide marketing campaign targeted at employers on the benefit of hiring an apprentice.

#### **Recommended Collective Action**

**The Ontario government, business, labour and other stakeholders, should collectively launch a province-wide marketing campaign targeted at employers on the benefit of hiring an apprentice and investing in apprenticeship training. All stakeholders must convey a strong, clear and concise message that “investing in apprenticeship is an investment in the Ontario economy.”**

# COST OF APPRENTICESHIP TRAINING & RETURN ON INVESTMENT

The cost of apprenticeship training, and concerns about the lack of resources to support apprenticeship, were cited in the 2004 Canadian *Apprenticeship Forum study Accessing and Completing Apprenticeship Training in Canada: Perceptions of Barriers* [CAF report] as two of the nine barriers affecting apprenticeship opportunities in Canada. Indeed, the Ontario Chamber of Commerce's past education and skilled trades surveys results support this. According to those surveys, OCC members believe that the cost to train apprentices exceeds the benefits. However, based on our research it is clear that investing in apprenticeship training increases an organization's profit margin and competitiveness.

## COST OF APPRENTICESHIP TRAINING

### Ontario's Government Expenditure

In Ontario and the rest of Canada, apprenticeship training is a partnership between business and government. Employers bear the cost of workplace training and the government pays for administration and the in-school cost of the program.

Most recently, the Ontario government announced a four-year \$13.6 million investment to create 1,000 additional skilled trades training spaces under the government's Co-op Diploma Apprenticeship Program.<sup>22</sup> Beginning this September, 1,000 students will be able to train in the following additional trades: automotive service technician/motive power technician, heavy duty equipment technician/motive power technician, industrial mechanic millwright/manufacturing engineering technician, and truck and coach technician/motive power technician. The Co-op Diploma Apprenticeship Program allows individuals to complete a college diploma, and at the same time register as an apprentice and work towards obtaining the provincial Certificate of Qualification.

The 2005 Ontario Budget announced the \$6.2 billion Reaching Higher plan in which training and apprenticeship will receive a cumulative total investment of \$366 million over the next 5 years (Fig. 4)

2005 Ontario Budget: Reaching Higher Plan (\$ Millions)							
Source: Ontario Ministry of Finance							
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Cumulative Total
Student Financial Assistance	150	192	241	282	314	358	1,537
Operating Grants to Colleges and Universities	50	447	732	932	958	1,156	4,275
<b>Training and Apprenticeship and Other Initiatives</b>	-	<b>44</b>	<b>62</b>	<b>86</b>	<b>87</b>	<b>87</b>	<b>366</b>
<b>Total New Investment</b>	<b>200</b>	<b>683</b>	<b>1,035</b>	<b>1,300</b>	<b>1,359</b>	<b>1,601</b>	<b>6,178</b>

Figure 4: Reaching Higher Plan (2005 Ontario Budget)

<sup>22</sup> Ontario Government. "McGuinty Opens Door to 1,000 New Apprentices," August 26, 2005. [http://ogov.newswire.ca/ontario/GPOE/2005/08/26/c3300.html?lmatch=&lang=\\_e.html](http://ogov.newswire.ca/ontario/GPOE/2005/08/26/c3300.html?lmatch=&lang=_e.html).

Such initiatives are positive steps to address Ontario's skilled trades requirements, as illustrated by Ontario's manufacturing skilled needs. The Ontario Chamber of Commerce encourages the Provincial Government to continue this trend and create more opportunities for skilled workers to be trained in all sectors.

## Ontario's Business Expenditure

It is a challenge to isolate the private sectors' investment in apprenticeship training since it ranges for each individual company as it depends on its industry and the number of apprentices employed.

On average, workshop delegates estimate the cost to train apprentices can range from approximately \$125,000 to \$250,000 and takes about four years. As already noted, the HRDC Study estimates that the net cost to an employer for training a tool and die apprentice is \$125,910 over a four-year period.<sup>23</sup> The majority of these costs are front-end-loaded and are incurred solely by the employer. The study also found it takes an average of five years for an employer to fully realize a return on this training investment.

The cost to train an apprentice can range from \$125,000 to \$250,000.

For the purposes of this report we reviewed the apprenticeship spending of three Ontario businesses: Algoma Steel, Sault Ste. Marie; Dofasco, Hamilton; and Comtek Advanced Structures, Burlington.

### Algoma Steel - Sault Ste. Marie

Algoma has six apprentices working on site and has spent \$250,000 since last fall training them. However, the company has expressed concern that there is no guarantee that its new apprentices will continue to work there once training is complete.<sup>24</sup> At the date of this report, Algoma is the first private employer in the North to deliver on-the-job and classroom training for apprentices. Training staff at Algoma developed a course of instruction to standards set by the Ministry of Education and Training. The company paid for all the development costs of the training, including the preparation of detailed lesson plans, performance evaluations and reporting procedures. Previously, Algoma would have sent its six hoisting engineer apprentices to train at either the Operating Engineers Training Institute in Morrisburg or Durham College in Oshawa for two six-week periods. Training apprentices in the south used to cost the Ontario government \$54,000 (apprentices also may have been eligible for support from the Federal government). Training apprentices in Sault Ste Marie now incurs no costs to the Ontario government.<sup>25</sup>

### Dofasco - Hamilton

Dofasco's Annual Report states that its 7,400 employees are its greatest competitive advantage. It has the second largest apprenticeship program in the province of Ontario, and over the last five years has employed an average of 476 students annually in various roles throughout the company. Its web-

<sup>23</sup>Canadian Tooling & Machining Association.

<http://www.ctma.com/Presentation%20to%20HOC%20Standing%20Committee%20-%20Nov%202002.pdf>

<sup>24</sup>Ross, Ian. "Born in the water, raised in the sky," February 2005. Northern Ontario Business.

<http://www.northernontariobusiness.com/regional/SaultStMarie/headlines.asp?449id145-pn=&view=32518>.

<sup>25</sup>Ministry of Training, Colleges and Universities. "Algoma Steel training announcement keeps apprentices in the North," June, 1998.

[http://www.edu.gov.on.ca/eng/document/nr/98.06/alg\\_e.html](http://www.edu.gov.on.ca/eng/document/nr/98.06/alg_e.html).

Site highlights that it provides some of the most progressive training programs in the industry and invests more than \$15 million a year to enhance the skills of its employees. Dofasco also offers its employees a tuition reimbursement program which allows them to return to the classroom to pursue diplomas, degrees and certificates in subjects pertaining to their careers with 100 per cent of the cost refunded on successful completion. Dofasco paid approximately \$290,000 in tuition reimbursements in 2004.

### Comtek Advanced Structures - Burlington

Comtek believes the main reason for its success is the quality of its employees and training. It is one of the fastest growing companies in Canada with sales growth of 1,000 per cent over the last five years. The company believes it could have achieved greater growth if it were able to train its staff

Comtek has pioneered an innovative in-house apprenticeship program to build its highly skilled workforce.

faster. During the same period of increasing sales growth, Comtek has been able to more than double productivity, as measured by sales per employee.<sup>26</sup> To sustain its competitive position, Comtek forges strategic alliances with government, industry and academic organizations to conduct applied research and development in new products and processes. Comtek has pioneered an innovative apprenticeship for its technical staff and established its own in-house training program to build the highly skilled workforce needed to achieve the company's aggressive growth targets.

### In Summary

The Ontario Chamber of Commerce strongly believes that it is very important that business and government in Ontario fully understand the benefits that investing in apprenticeship training has on the province's competitiveness and its economy. It is clear that from these three illustrations, investing in apprentices and employees has had a positive return on investment for each of the aforementioned businesses, and in turn, contributes positively to Ontario's economy.

<sup>26</sup> Comtek Advanced Structures Ltd., "Apprenticeship Training the Return on Investment."

## RETURN ON INVESTMENT OF APPRENTICESHIP TRAINING

Identifying the Return on Investment (ROI) of apprenticeship training was a critical element to establishing the business case for investing in apprenticeship and skilled trades in Ontario. Companies can measure ROI in several ways including employee turnover, retention, productivity, reduced hiring costs and total annual savings.

### Canadian Research

In the Canadian apprenticeship community, to date, minimal research has focused on the actual cost and benefit of investing in apprenticeship training.<sup>27</sup>

The Alberta Learning Apprenticeship and Industry Training Board believes that apprenticeship training is a wise business investment. A survey of employees shows that slightly more than 77 per cent of respondents said that employing registered apprentices actually increased both their bottom line and their competitive edge.<sup>28</sup> About 83 per cent said employing apprenticeship-trained journeymen increases both their profit margin and their competitiveness.<sup>29</sup>

A survey of Alberta employees shows that more than 77% believe employing an apprentice increases their bottom line and competitive edge.

### US Research

In the United States, according to the North Carolina Department of Labor, the federal government currently spends approximately US\$16 million for administration of the apprenticeship system, while the individual states contribute an additional US\$20 million. Thus, the total public investment amounts to approximately US\$36 million, translating into about US\$110 per apprentice.

The US government's return on investment in registered apprenticeship outperforms other types of government-sponsored job training programs. According to the North Carolina Department of Labor, apprenticeship is a proven training strategy that improves the skills of the American workforce and enhances the efficiency and productivity of American industry. Moreover, since apprentices pay income taxes on their wages, it is estimated that for every US\$1 the federal government invests, it yields more than US\$50 in revenue.<sup>31</sup> Thus, if all 325,000 apprentices earn an average annual income of US\$15,000, this would generate nearly US\$1 billion in federal revenues alone.<sup>32</sup>

<sup>27</sup>Human Resources and Skills Development Canada (HRSDC) has recently approved a project in which the Canadian Apprenticeship Forum (CAF) will examine the factors which influence the cost and benefit of apprenticeship training for various stakeholders such as the apprentice, the employer, unions, educators, equity seeking groups, governments and/or other stakeholders. The initial phase of this project began in January 2005 and will likely be completed by the end of the year or early 2006.

<sup>28</sup>"Training Apprentices 2003." Alberta Apprenticeship and Industry Training Board, July 2003.

<sup>29</sup>ibid

<sup>30</sup>"Apprenticeship FAQ's." North Carolina Department of Labor. Apprenticeship and Training Bureau.

<sup>31</sup>"Apprenticeship FAQ's." North Carolina Department of Labor. Apprenticeship and Training Bureau.

<sup>32</sup>ibid

## British Research

In the United Kingdom, numerous studies have been conducted on the return to business on apprenticeship training. The UK Apprenticeship Task Force's Business Progress Report indicates that UK companies who hired apprentices displayed a positive return on investment, increased competitiveness, reduced costs and increased staff retention.<sup>33</sup>

According to the report, companies also experienced a positive return on investment including higher productivity, higher quality of work, and better staff retention and employee satisfaction. British Telecom (BT) calculated an annual net profit of more than £1,300 per apprentice when compared to non-apprentice recruitment for the same positions. At BAE Systems, apprentices provide a higher net return on investment than externally recruited employees. Numerically, apprentices provided a 25 per cent ROI, translating into savings of £13,000 per employee.

**UK apprentices provide a 25% ROI and generate a 7.5% higher rate of productivity**

In the Learning and Skills Council's National Employer Statistical Survey (January 2004) almost half of the employers reporting "skills shortage vacancies" said they are losing business to competitors as a result of a lack of skilled workers. Those companies employing skilled trades workers and apprentices experience an increase in competitiveness.

Task Force employers with case studies in its Business Progress Report say there is a strong link between adding value through training and higher productivity. British Telecom apprentices generate a 7.5 per cent higher rate of productivity than non-apprentices.

## In Summary

Investing in apprentices clearly pays off in the form of increased profits and competitiveness. Each jurisdiction studied experienced different benefits from hiring apprentices. Business costs are reduced with improved productivity, additional government funding, less waste and fewer costs related to absenteeism. Other benefits of apprenticeship training may include experiencing lower attrition rates which have led to lower costs for recruitment and training. Employer apprenticeship programs tend to reduce external recruitment costs as a result of high retention rates, giving companies a competitive advantage in tight labour markets

<sup>33</sup>The 'Employers for Apprentices' website (<http://www.employersforapprentices.gov.uk>) supports the work of its Apprenticeships Task Force. The Task Force is an employer-led group, chaired by Sir Roy Gardner, Chief Executive of Centrica plc. The Task Force wants to increase the opportunities available for young people to participate in Apprenticeships. It also aims to ensure that the programme responds to the changing needs of employers and young people.

# POACHING AND RETENTION

It is clear that most companies find cost the largest barrier to investing in apprenticeship, even though there are many benefits associated with hiring apprentices. An even bigger fear as identified by workshop delegates and numerous studies on skilled trades, is that apprentices will be poached, or will voluntarily seek other employment after the employer has taken the time and money to train them. According to the Ontario Chamber of Commerce's skilled trades survey, "hiring from other enterprises" was selected as one of the top three options for the sources of apprentices.

Poaching occurs because there is not enough skilled trades workers and apprentices to meet industry demand in Ontario. It is simple economics, as the demand for skilled trades workers and apprentices is outstripping supply.

We have already concluded that the high cost of apprenticeship training is a key element in deterring employers from taking on more apprentices. Coupled with the negative image from which skilled trades professions suffer, supply will continue to remain low. If nothing is done to increase the supply of apprentices and skilled trades workers, poaching will without a doubt continue and cause economic damage to industry in Ontario.

There are some short-term strategies listed below to assist with the problem of poaching; however, it will only take the long-term goal of markedly increasing the supply of skilled trades workers and apprentices to minimize the issue of poaching in Ontario.

It will only take the long-term goal of markedly increasing the supply of skilled trades workers and apprentices to minimize the issue of poaching in Ontario.

## Short-Term Strategies

Poaching and retention go hand-in-hand without a good retention strategy, companies are vulnerable to having other companies hire their employees. Ontario Chamber of Commerce survey respondents were asked to identify best practices that would help retain skilled trades workers and apprentices. According to respondents, a good retention strategy includes competitive wages and benefits, a positive work environment, opportunities for growth within the organization, job satisfaction and continual training. In order for businesses to effectively compete in Ontario's growing economy, they must be able to attract and retain skilled workers to fill job vacancies and drive productivity.

### Recommended Employer Action

**Ontario employers must focus on developing a good retention strategy in order to retain and attract skilled trades workers and apprentices.**

As with all industries, poaching also takes place because of salary. Payroll taxes increase the cost of hiring and absorb funds that might otherwise be used by employers to hire and/or train the employees they need.<sup>34</sup> Since employers are less able to pay apprentices higher wages, poaching can easily happen when apprentices receive a competitive offer from another employer. The original employer loses its investment and will likely hesitate before training another apprentice.

<sup>34</sup>Canadian Labour and Business Centre. Report, "Make Skills a National Priority: Consultations by the Canadian Labour and Business Centre." July 2001. [http://www.clbc.ca/files/Reports/makeskills\\_e.pdf](http://www.clbc.ca/files/Reports/makeskills_e.pdf)

Another factor contributing to poaching is the dissatisfaction that an employee may feel with their trade or work environment. Employers must recognize that apprentices want to work and need to be given responsibility and room to grow or they will be susceptible to poaching. Employers should also consider adopting a policy of ongoing training and continuous learning to retain their employees as a whole in order to maintain competitiveness.<sup>35</sup> It is widely recognized that employers who invest in training apprentices are at a loss when that apprentice is poached by another company. Training is key to retaining apprentices.

Workshop delegates cited the high cost of tools and equipment as another barrier to apprenticeship. The Canadian Labour and Business Centre suggests that the government institute a tax credit for the purchase of tools by new tradespersons, which are often prohibitive expenditures that are a serious barrier to beginning a career in the trades. In some trades, tools can cost up to \$8,000.<sup>36</sup>

#### **Recommended Government Action**

**The Ontario government should offer a specific tax credit for the purchase of tools and equipment for new skilled trades workers and apprentices.**

Workshop delegates also cited employment insurance (EI) as a barrier to apprenticeship. The Canadian Labour and Business Centre suggests eliminating the two-week EI waiting period for apprentices on block release for classroom training. This waiting period effectively strips workers of income for a two-week period. Since many apprentices have family responsibilities and expenses, this presents an unnecessary and removable obstacle to their continued apprenticeship.

#### **Recommended Government Action**

**The federal government should work with the provincial government to eliminate the two -week employment insurance (EI) waiting period for apprentices on block release from classroom training.**

The Ontario government should work with the federal government and other provinces on establishing a national apprenticeship certification process for Canada. Currently, the Government of Canada's Apprenticeship and the Interprovincial Standards "Red Seal" Program ([www.red-seal.ca](http://www.red-seal.ca)) encourages the standardization of provincial and territorial apprenticeship programs and certification, to provide greater mobility across Canada for skilled workers. The Red Seal program is only mandatory in those jurisdictions where it has been expressly indicated in their apprenticeship legislation. Ontario has not made the Red Seal Program mandatory.

#### **Recommended Government Action**

**The Ontario government should adopt the Red Seal Program as mandatory for Ontario designated apprenticeship trades; work with other provinces and territories to make training and certification procedures and requirements uniform across Canada; and work with the federal government over the long-term to develop a national certification process for apprenticeship by 2008 through the Red Seal Program.**

35 Canadian Labour and Business Centre. Report, "Make Skills a National Priority: Consultations by the Canadian Labour and Business Centre." July 2001. [http://www.clbc.ca/files/Reports/makeskills\\_e.pdf](http://www.clbc.ca/files/Reports/makeskills_e.pdf)

36 ibid

As a way of dealing with the poaching issue, workshop delegates suggested that apprentices sign a contract and commit to a minimum number of years of employment to that organization following their training. The Canadian Forces offers subsidized education upon signing of a contract that commits the recruit to serve in the Canadian Forces during school and after graduation.<sup>37</sup> The new recruit will sign a contract stipulating a specific term of employment. Ontario employers may wish to consider a similar concept when hiring an apprentice.

#### **Recommended Employer Action**

**Ontario employers should consider creating contracts to commit a new apprentice to a specified amount of employment following their training.**

Workshop delegates also suggested sharing apprentices and offering a journey person who trains an apprentice either a completion of training bonus and/or a certification. In Quebec, employers whose total payroll is \$1 million or more must invest at least one per cent of their total payroll in employee training.<sup>38</sup> It is the belief of labour that a training tax or grant levy system such as Quebec's "Loi du 1%" will contribute to addressing the issues of poaching and help by requiring employers to provide training or to subsidize employers who do.<sup>39</sup> Quebec's Workplace Apprenticeship Program provides the journey person who supervises an apprentice for a year with a professional qualification certificate. Employers can also receive a tax credit that will allow them to finance a portion of the training expenses incurred through their participation in the Qualification Plan.<sup>40</sup>

#### **Recommended Government Action**

**The Ontario government should provide the journey person who supervises and trains a new apprentice with a "Certificate of Training Qualification" to the trainer.**

### **In Summary**

The Ontario Chamber of Commerce believes that the best way to minimize poaching is to increase the number of skilled trades workers available. There are many barriers that first must be addressed, in particular, introducing formally recognized skilled trades and apprenticeship as the third pillar of postsecondary education in Ontario; including technical education in Ontario's education curriculum; increasing the awareness of skilled trades professions among students, parents and teachers; and alleviating some of the cost pressures faced by small-to-medium sized businesses for training apprentices either through cost-sharing and/or tax credits and/or rebates. Only then will the issue of poaching be addressed.

<sup>37</sup> National Defense. Canadian Forces Recruiting, FAQ Questions and Answers. [http://www.recruiting.forces.gc.ca/engraph/faq/index\\_e.aspx#q3](http://www.recruiting.forces.gc.ca/engraph/faq/index_e.aspx#q3).

<sup>38</sup> Emploi-Quebec. 1% Training Investment. Online at <http://emploi-quebec.net/anglais/index.htm>.

<sup>39</sup> Canadian Labour and Business Centre. Report, "Make Skills a National Priority: Consultations by the Canadian Labour and Business Centre." July 2001. [http://www.clbc.ca/files/Reports/makeskills\\_e.pdf](http://www.clbc.ca/files/Reports/makeskills_e.pdf)

<sup>40</sup> Emploi Quebec. "Workplace Apprenticeship Program," <http://emploi-quebec.net/anglais/individus/qualification/apprentissage.htm>.

# INCREASING SUPPLY & MEETING DEMAND FOR APPRENTICES

A major cause for the looming skilled trades shortage in Ontario is due to a large number of skilled trades workers retiring, combined with very few new apprentices entering into the labour market. A study by the Ontario Chamber of Commerce found that 52 per cent of skilled trades people are expected to retire within the next 15 years.

Apprenticeship must be recognized as the third pillar of postsecondary education in Ontario.

Meeting demand for apprentices and skilled trades workers will require a multi-pronged approach, but first, all stakeholders must recognize apprenticeship as the third pillar of postsecondary education. The emphasis on the preparation for and the value of university education has overshadowed or ignored the value of other alternatives. As the Rae Report pointed out, universities are increasingly the destination of choice for many people contemplating higher education.<sup>41</sup> Ontario must ensure that college vocational education is equally valued, and available to

Ontarians who would benefit from a range of vocational and skills education, from the basic to the advanced level.

Ontario's next generation workforce begins at home and in the classroom. Starting in the early years, children have the opportunity to be exposed to the education system. In high school, students study all subjects of a comprehensive curriculum geared towards university studies. Students need to be aware that they have several options before them when graduating from secondary school:

- Attending university
- Attending college
- Becoming an apprentice or skilled trades worker

## Recommended Collective Action

**In all marketing materials, the Ontario government, employers, parents, teachers and students must acknowledge and recognize that the third component of postsecondary education in Ontario is apprenticeship.**

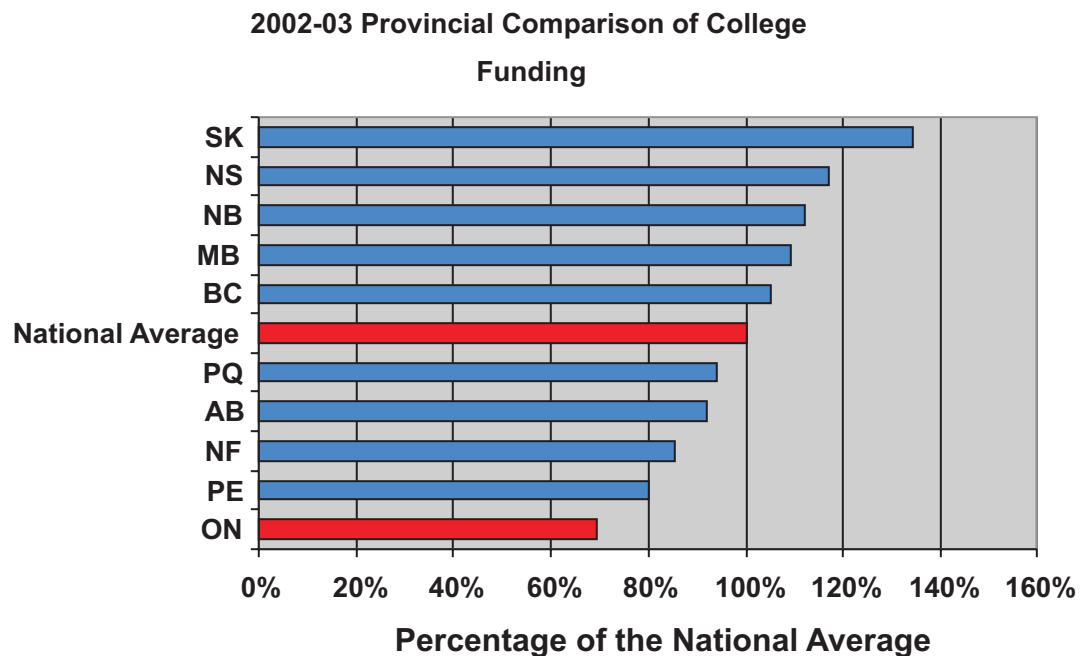
The Ontario government has recently introduced the Co-op Diploma Apprenticeship Program that will enable young people to train as apprentices in a specific trade while obtaining an associated college diploma.<sup>42</sup> This new program is an innovative way to further integrate college training and apprenticeship training. The Ontario Chamber of Commerce is encouraged by the government's initiative in developing this program to integrate college delivery of apprenticeship training, and believes there is even more of an opportunity for Ontario colleges to take a lead role in promoting and delivering apprenticeship training. The Association of Colleges of Applied Arts and Technology of Ontario (ACAATO) can share its expertise in marketing and recruitment of students by working collaboratively with employers to increase the number of training spaces in industry.

<sup>41</sup> Ontario Ministry of Education and Training, Colleges and Universities: Co-op Diploma Apprenticeship Program. <http://www.edu.gov.on.ca/eng/training/apprenticeship/appren.html>.

<sup>42</sup> Ontario Ministry of Education and Training, Colleges and Universities: Co-op Diploma Apprenticeship Program. <http://www.edu.gov.on.ca/eng/training/apprenticeship/appren.html>.

Ontario's colleges provide applied skills training at the postsecondary level and according to ACAATO, colleges already provide 90 per cent of apprenticeship training in the province. Ontario's colleges serve 52 per cent more students than 15 years ago, but receive 40 per cent less funding per student in constant dollars. Ontario colleges receive about 70 per cent of the national average revenue per student (operating grants plus tuition), the lowest of all the Canadian provinces (Fig. 5).<sup>43</sup>

Ontario's colleges provide 90% of apprenticeship training.



**Figure 5: 2002-03 Provincial Comparison of College Funding**  
*Source: Association of Colleges of Applied Arts and Technology*

Ontario colleges represent a unique role in being able to offer a clear pathway to becoming an apprentice and are key partners in apprenticeship training. Unlike becoming a teacher, engineer, doctor or lawyer, there is no one clear path to becoming an apprentice. There are several options for training, including school-to-work, the Ontario Youth Apprenticeship Program (OYAP), colleges and unions. Since Ontario's college sector already delivers 90 per cent of apprenticeship training, it would be a wise investment to designate this as the single pathway to apprenticeship.

<sup>43</sup> ACAATO Environmental Scan 2005: Section 4 College Resources.  
[http://www.acaato.on.ca/home/research/environmental/primaryInternalContentParagraphs/08/document/4.College\\_Resources.pdf](http://www.acaato.on.ca/home/research/environmental/primaryInternalContentParagraphs/08/document/4.College_Resources.pdf).

The Rae Review on Postsecondary Education also recommends that apprenticeship programming be delivered by colleges.

Recognize apprenticeship as a postsecondary destination, and treat the apprenticeship programming delivered by colleges as a core business. Assign to colleges the government's role in administration and outreach to employers (for those apprenticeship programs in which colleges deliver in-school training).

- Rae Review on Postsecondary Education, "Ontario: A Leader in Learning"

Colleges have strong ties to their communities that can be leveraged to support substantial growth in apprenticeship. They have active relationships with their employer communities, which enables co-op and field placements for students, job placements for graduates, financial support for capital campaigns, contract training for employed workers, and employer participation on a myriad of program advisory committees. Colleges are in an ideal position to expand their current outreach activities to employers to promote greater employer participation in apprenticeship training.

Funding for Ontario's colleges must be at least brought up to the national average in order for colleges to successfully manage and execute apprenticeship training.

#### **Recommended Government Action**

**The Ontario government should fund colleges at the national average and work closely with the Association of Colleges of Applied Arts and Technology of Ontario (ACAATO) to facilitate the integration of apprenticeship training into the college operating grant.**

## **RAISING AWARENESS**

Raising awareness first starts with attitudes: a major attitudinal and cultural shift must take place in people's minds and all stakeholders must understand the need for skilled trades workers in Ontario.

"People need to realize that there will always be windows needed to look out of, buildings to work out of and live in, light switches to turn on, floors to walk on, and so on. None of this can happen without skilled trades..."

- Ontario Chamber of Commerce Member

The simple fact is that skilled trades professions are not viewed as desirable career choices. The issue of "image" or "perception" or "attitudes" has been cited as a barrier in several academic studies and surveys on skilled trades. According to the Ontario Chamber of Commerce member survey on skilled trades, the number one cause for the skilled trades shortage is that these professions are not viewed as desirable career destinations. CAF's study found that the negative attitudes and perceived negative image of the trades on the part of young people, parents and employers make it extremely difficult to attract apprentices.

This significant challenge stems from the perception and stereotype that skilled trades are less academic, more laborious and not as challenging, stable or high paying as more "professional" or "white-collar" careers in accounting, law, consulting, etc. On the contrary, careers in skilled trades require a significant amount of on-the-job training as well as classroom instruction; many trades

require the use of leading-edge technology; and such careers are stable and very lucrative. According to the Statistics Canada 2001 Census, more than 20 different trades can provide earnings substantially above average. A trade's certification provided an income level 3.1 per cent above the average for all educational levels. In several trades, earnings are well above the national average. For example, tool and die makers earn about 23 per cent more than the average and electricians 16.5 per cent above average.<sup>44</sup>

### Multi-Stakeholder Marketing Campaign

The benefits of apprenticeship training and information about skilled trades professions must be communicated to the youth. A multi-stakeholder marketing campaign should be developed to enhance the image and the awareness of skilled trades.

The marketing program should leverage television and print ads similar to the “Skilled Trades: A Career You Can Build On” Campaign ([www.careersintrades.ca](http://www.careersintrades.ca)) directed to students and potential apprentices across the Province of Ontario. The campaign could also highlight or feature role models in the trades professions, much the same way it is done in business, music and sports.

#### Recommended Collective Action

**The Ontario government, business, labour and other stakeholders, should collectively launch a province-wide marketing campaign targeted at students, parents and future apprentices on the benefits of careers in skilled trades.**

A second campaign should be launched both as an advocacy and awareness measure targeted at government and business in Ontario on the apprenticeship return on investment. It is equally important to raise awareness to the business community in Ontario. Workshop delegates repeated again and again that businesses need to understand that apprenticeship must be treated as an investment by the employer and industry. As stated earlier, a \$10 billion investment in apprenticeship training today would generate a \$43 billion gain in the future - **a 430 per cent return on investment** - just for maintaining the status quo in Ontario's manufacturing sector.

According to a variety of sources including the Rae Report on Postsecondary Education, approximately 80-to-90 per cent of apprenticeship training is delivered in the workplace, while the remaining 10-to-20 per cent is delivered in an in-school environment. Since apprenticeship training costs are shared between business and government, both of these groups need to understand this benefit.

**Apprenticeship must be treated as an investment.**

<sup>44</sup>Skilled Trades: A Career You Can Build On. Fact Sheet. [Http://www.careersintrades.ca/media/fact\\_sheet\\_en.pdf](http://www.careersintrades.ca/media/fact_sheet_en.pdf)

### **Recommended Collective Action**

**The Ontario government, business, labour and other stakeholders, should collectively launch a province-wide marketing campaign targeted at employers on the benefit of hiring an apprentice and investing in apprenticeship training. All stakeholders must convey a strong, clear and concise message that “investing in apprenticeship is an investment in the Ontario economy.”**

## Recognizing Apprentices

Along these same lines, there is also a need to recognize apprentices and skilled trades workers just as university and college graduates are recognized with a degree and diploma, respectively. Certified apprentices and trades people need to have noticeable recognition to improve their image. Workshop delegates suggested an identifiable symbol, pin or emblem to acknowledge and brand licensed journeypersons (i.e., the iron ring for engineers).

## Supporting Technological Education in Ontario's Curriculum

In order to raise awareness to youth there is a dire need to enhance funding for technological education in Ontario's secondary school curriculum. Workshop delegates repeatedly stated that young people need to have early exposure to trades and technical training at the secondary level; therefore, trades and technical education must be part of Ontario's education curriculum. Developing multi-year plans for renewing and supporting technological education programs in the secondary school curriculum in Ontario is essential to competitiveness and skills development.

A 2002 government report suggested the biggest challenge to overcome is the lack of exposure students have to technological education, especially at the early stages in their education.<sup>45</sup> Since more than 60 per cent of students go into the workforce straight from school they need at least one, if not more, technological education courses no matter what their career destination.<sup>46</sup>

The current funding formula does not adequately address the unique costs of technological education as it requires a long-term funding strategy. In the absence of such a strategy, funding for technological education continues to run the risk of being removed from schools because of budget restraints.

Though the Ontario Chamber of Commerce supported the Technological Education Renewal Initiative, also known as the TERE Fund, we believe that the Ontario government must establish a strong and sustainable technological education program in elementary and secondary school curriculum. To achieve this, the government must enhance funding for technological education and provide stable multi-year funding to be used for program development, teacher training and related capital costs. One-time grants such as the \$60 million 1990-1995 TERE program are not enough specific and sustained funding of at least \$12 million per year (based on the \$60 million 1990-1995 TERE program) should be instituted into the Ministry of Education's budget.

<sup>45</sup> Dunlop, Garfield. Technological Education in Ontario's Public Schools: Contributing to a Skilled Workforce. April 2002.

<sup>46</sup> Statistics Canada. "People employed, by educational attainment," 2004. <http://www40.statcan.ca/l01/cst01/labor62.htm>

#### **Recommended Government Action**

**The Ontario government must establish strong and sustainable technological education programs in elementary and secondary school curriculum in Ontario. The government must enhance funding for technological education and provide stable multi-year funding of at least \$12 million per year (based on the TERI program) to be used for program development, teacher training and capital costs.**

### Enhance Co-operative Programs

Improvements to the existing Co-operative Education Tax Credit (CETC) and conducting a public awareness and marketing campaign would encourage more employers to hire more co-op students. This would make talented future employment prospects more accessible to small and medium sized businesses in the province, and would help develop more highly skilled and experienced post-secondary graduates entering the workforce.

While the current provincial tax credit is an incentive, more could be done to encourage small and medium sized businesses to hire co-operative education students. Once administrative costs, training costs, etc. are considered, the current refundable tax credit to a maximum of \$1,000 per student does not amount to a significant incentive for existing and potential employers. In comparison, employers in Quebec have tax credits that amount to almost three times the Ontario maximum.

#### **Recommended Government Action**

**The Ontario government should increase the current \$1,000 Ontario Co-operative Education Tax Credit to \$2,500 per work term for each co-op student and raise the rate of the tax credit on eligible expenses from 10 per cent to 25 per cent. Furthermore, the government should work with business and education stakeholders, as well as local chambers of commerce and boards of trade, to conduct a public awareness and marketing campaign for co-operative education.**

### Essential Skills

There is a strong indication that high school graduates may be lacking the “soft skills” or “essential skills” they need to work. Essential skills include reading text, document use, writing, numeracy, oral communication, thinking skills (problem solving, decision making, job task planning and organizing, significant use of memory, finding information), working with others, computer use and continuous learning.

#### **Recommended Collective Action**

**There is an opportunity for partnership among stakeholders to raise awareness about the importance of essential skills, as well as possibly integrating this within apprenticeship training and education, both at the high school and college levels. The government should also consider making the Test of Workplace Essential Skills (TOWES) mandatory in all Ontario workplaces.**

### In-School Presentations

As part of the workshop Program, delegates received the “In-School” Presentation from Skills Canada-Ontario. As a result they recommended that schools must receive these presentations to increase awareness about apprenticeship and skilled trades professions.

Skills Canada-Ontario's informative and interactive presentation brings career opportunities in the skilled trades and technologies to the forefront for many young people. Students in attendance have access to knowledgeable people that can provide them with the information they require to make informed career decisions. To date, Skills Canada-Ontario has conducted over 1,000 presentations on skilled trades, reaching more than 50,000 young people.

**Recommended Educators Action**

**Ontario's secondary schools, as well as all elected school trustees, boards of education and guidance councillors, should receive a presentation similar to the one from Skills Canada-Ontario and receive more of an education on the careers available in the skilled trades.**

### Skilled Trades Teachers

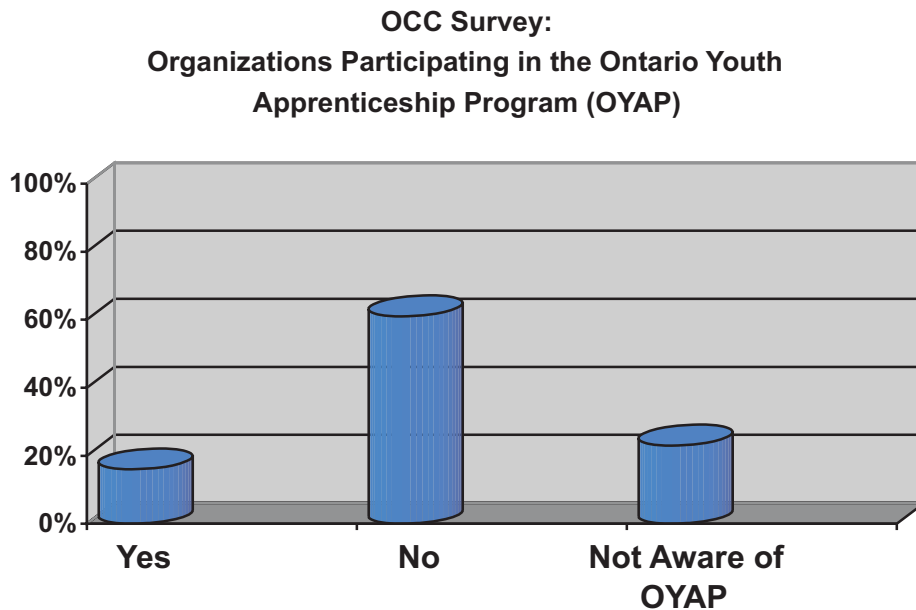
To improve the career and education decision-making choices of young people, it would also be useful if schools hired skilled trades workers as teachers. As noted, skilled trades suffer from a poor image due in part to negative and sometimes uninformed attitudes on the part of parents, teachers and guidance councillors. As a result, students are often directed to university studies upon graduation at the expense of colleges and particularly, of skilled trades and apprenticeship. Schools have an opportunity to assist students in making more informed decisions if they consider hiring skilled trades workers as teachers.

In addition to parents and guidance councillors, teachers also have an important role to play in assisting students with their education decisions. The more parents, students and guidance councillors/teachers are aware of the opportunities and benefits of apprenticeship training, the greater the chance to reduce the growing skilled trades shortage in Ontario.

**Recommended Educators Action**

**Ontario's secondary schools should attract and hire more teachers with trade qualifications.**

## Increase OYAP



**Figure 6: Business Participation in OYAP**

Simply put, more employers should start using the Ontario Youth Apprenticeship Program (OYAP). There seems to be an issue of awareness surrounding this program. According to a study by the Ontario Chamber of Commerce only 15 per cent of survey respondents said that their company participates in OYAP while nearly a quarter were not aware of the program.

### **Recommended Government Action**

**Increase and expand the reach of the Ontario Youth Apprenticeship Program (OYAP).**

## Labour Market Development Agreement

A federal-provincial training agreement between the federal government and the Province of Ontario would help keep Ontario's pool of labour competitive in terms of its skills and would ensure that Ontario gets its fair share of federal training dollars. Ontario remains the only province that has not signed a training agreement with the federal government.

The OCC was pleased that the federal and provincial governments agreed to a new \$5.75 billion transfer deal, announced on May 8, 2005. This agreement included a deal to reach a new labour market agreement, **which was to be signed within 30 days of the negotiation**, for Ontario and the federal government. The labour market agreement is supposed to include an increase in funding for training unemployed persons in Ontario to the national average. At the date of this report, it has been over 90 days since the announcement and no details of the new labour market agreement have been announced. Though the OCC was originally pleased to hear the Premier and Prime Minister address labour market services in their agreement, we are disappointed that the plan has yet to be implemented.

#### **Recommended Government Action**

**The federal government should immediately complete its negotiations with the provincial government and create a Labour Market Development Agreement for Ontario.**

### **Internationally-Trained Trades People**

The Ontario Chamber of Commerce believes that eliminating barriers for internationally-trained trades people is essential to enhancing Ontario's workforce and to combat any future skills trades shortage in Ontario. It is important that the government continue to support programs that allow foreign trained professionals to be recertified in their specific field and to find gainful employment within Ontario.

**Eliminate barriers for internationally-trained skilled trades workers.**

Each year the province receives over 100,000 immigrants approximately 60 per cent of all immigrants to Canada. These immigrants are highly skilled (the province estimates that 72 per cent of these immigrants have some post-secondary education and/or training).<sup>47</sup> According to the federal government, despite having a higher level of education, immigrants face an increasingly difficult time in the jobs market and suffer economic loss because their education is not recognized. These immigrants represent the majority of underutilized Canadians who lose between \$4.1 billion and \$5.9 billion in income each year, according to the Conference Board of Canada.<sup>48</sup> This is because employers are either not hiring new immigrants or they do not know how to verify foreign credentials using the existing World Education Service and other credentialing services.

#### **Recommended Government Action**

**The Ontario government should continue to support and provide funding for the certification, licensing and accreditation of internationally trained professionals and trades people, and further encourage and support cooperative programs that help to integrate internationally trained professionals and trades people into Ontario's business sector. The federal and provincial governments should work closely with business partners to assist in making businesses across the province aware of the existence of the World Education Service and other credentialing services and encourage their use.**

<sup>47</sup>Integrating International Trained and Educated Professionals and Trades people into Ontario's Economy," Access to Professions and Trades Unit, Ministry of Training, Colleges and Universities, August 2002.

<sup>48</sup>"Brain Gain: The Economic Benefit of Recognizing Learning and Learning Credentials in Canada," The Conference Board of Canada, 2001.

## Access

Workshop delegates had several recommendations to address image and awareness barriers.

If stakeholders find the apprenticeship system difficult to understand, so will students and parents.

Students, colleges and employers say that the current structure of the apprenticeship system requires improvement and change to make it easier and more efficient to navigate successfully through the required steps. If these stakeholders find the system difficult to understand, students and parents will also have difficulty. Workshop participants made several suggestions to streamline the current apprenticeship system including developing online apprenticeships and an online portal to house the mass of information available. A majority of workshop delegates noted that there are too many levels of bureaucracy and there is too much paperwork for employers and apprentices this red tape and the administrative burden is a barrier to apprenticeship in Ontario.

One segment of the OCC Skilled Trades Workshop asked delegates to identify regional programs in Ontario that promote apprenticeship and skilled trades professions. Delegates identified over 50 programs, which are summarized and described in Appendix IV: Regional Programs of this report.

There are currently well over 50 individual apprenticeship websites offering information, resources and links to other sites. Ontario requires an online web portal to house all the relevant skilled trades information for apprentices, students, employers and parents.

To be successful, this “One Stop Ontario Apprenticeship Shop” or “Information Clearinghouse” should be continually updated and improved with fresh content. Several organizations have excellent websites promoting skilled trades and information about becoming an apprentice. The following organizations should participate in this project:

- Ontario Ministry of Training, Colleges and Universities
- Ontario Chamber of Commerce
- Skills Canada-Ontario
- Skilled Trades Alliance
- Local Industry Education Councils
- Canadian Apprenticeship Forum
- TVOntario
- Automotive Parts Manufacturing Association
- Association of Colleges of Applied Arts and Technology of Ontario

Online resources are key to helping students plan for their future. It is a daunting challenge to recommend the creation of one online portal housing all the information available, but it is, at the very least, necessary for all the resource links to be collected on one specific site and promoted to a wider audience.

Through its extensive chamber network, the Ontario Chamber of Commerce represents 57,000 businesses in Ontario. The OCC would be pleased to help promote such an information

clearinghouse through its membership. It is critical to ensure that all individuals, regardless of their socio-economic status, geographic location or any other barriers, have the access to such information. TVOntario's submission to the postsecondary review sums up this issue well:

“Accessibility starts with awareness of the wealth of opportunities available in Ontario.”

Workshop delegates stated that the administrative burden of apprenticeship in Ontario is yet another barrier. An online portal, as described and recommended above, could also have the added benefit of providing employers and apprentices with a “one-stop access shop” to register apprentices.

**Recommended Collective Action**

**All stakeholders need to collaborate to create and maintain a comprehensive and user-friendly web portal for apprentices and employers as a source of current information on apprenticeship and skilled trades in Ontario.**

# APPENDIX I: ONTARIO MANUFACTURING INDUSTRY OVERVIEW

According to Industry Canada, the manufacturing (NAICS 31-33) sector comprises establishments primarily engaged in the physical or chemical transformation of materials or substances into new products. These products may be finished, in the sense that they are ready to be used or consumed, or semi-finished, in the sense of becoming a raw material for an establishment to use in further manufacturing.

Related activities, such as the assembly of the component parts of manufactured goods; the blending of materials; and the finishing of manufactured products by dyeing, heat-treating, plating and similar operations are also treated as manufacturing activities.

Manufacturing establishments are known by a variety of trade designations, such as plants, factories or mills. Manufacturing establishments may own the materials which they transform or they may transform materials owned by other establishments. Manufacturing may take place in factories or in workers' homes, using either machinery or hand tools.

According to Industry Canada, the manufacturing sector is comprised of the following sub-sectors:<sup>49</sup>

- Food Manufacturing
- Beverage and Tobacco Product Manufacturing
- Textile Mills
- Textile Product Mills
- Clothing Manufacturing
- Leather and Allied Product Manufacturing
- Wood Product Manufacturing
- Paper Manufacturing
- Printing and Related Support Activities
- Petroleum and Coal Products Manufacturing
- Chemical Manufacturing
- Plastics and Rubber Products Manufacturing
- Non-Metallic Mineral Product Manufacturing
- Primary Metal Manufacturing
- Fabricated Metal Product Manufacturing
- Machinery Manufacturing
- Computer and Electronic Product Manufacturing
- Electrical Equipment, Appliance and Component Manufacturing
- Transportation Equipment Manufacturing
- Furniture and Related Product Manufacturing
- Miscellaneous Manufacturing

## Manufacturing – Quick Facts

Manufacturing directly accounts for 18% of the Canadian economy.

Every dollar of manufacturing output in Canada generates \$3.05 in total economic activity.

More than 2.2 million Canadians are employed in manufacturing – about 15% of the Canadian workforce.

Canadian manufacturers produced and shipped goods valued at \$610 billion in 2004.

Manufacturing has grown 16% faster than the Canadian economy as a whole since 1990.

Manufacturing accounts for two-thirds of Canada's total exports of goods and services.

Manufactured exports have more than doubled since 1990.

Over 95% of employees in manufacturing have full-time jobs.

Manufacturing wages are 22% higher than the national average.

Manufacturers invested over \$20 billion in new technologies and production facilities in 2004.

Manufacturing accounts for two-thirds of all business investment in research and development in Canada.

Source: Canadian Manufacturers and Exporters, "Manufacturing 20/20: The Future of Manufacturing in Canada, Perspective and Recommendations on Workforce Capabilities"

**Figure 7: Manufacturing - Quick Stats**



The table below illustrates the breakdown of occupations within Ontario's manufacturing industry (Fig. 9). The largest share of employment in the manufacturing industry is in occupations that are unique to processing, manufacturing and utilities.<sup>52</sup>

<b>Occupational Grouping</b>	<b>Manufacturing Industry ( % )</b>
Management	8
Business, Finance and Administration	13
Natural and Applied Sciences	8
Art, Culture, Recreation and Sport	1
Sales and Service	4
Trades, Transport and Equipment Operators	18
Processing, Manufacturing and Utilities	49

**Figure 9: Ontario's Manufacturing Industry - Occupational Grouping**

The National Occupational Classification (NOC) system lists the occupations unique to processing, manufacturing and utilities, classified as NOC “J” (Fig. 10).<sup>53</sup>

<b>Occupations Unique to Processing, Manufacturing and Utilities (NOC “J”)</b>
Supervisors, Processing Occupations
Supervisors, Assembly and Fabrication
Central Control and Process Operators in Manufacturing and Processing
Machine Operators and Related Workers in Metal and Mineral Products Processing
Machine Operators and Related Workers in Chemical, Plastic and Rubber Processing
Machine Operators and Related Workers in Pulp and Paper Production and Wood Processing
Machine Operators and Related Workers in Textile Processing
Machine Operators and Related Workers in Fabric, Fur and Leather Products Manufacturing
Machine Operators and Related Workers in Food, Beverage and Tobacco Processing
Printing Machine Operators and Related Occupations
Mechanical, Electrical and Electronics Assemblers
Other Assembly and Related Occupations
Machining, Metalworking, Woodworking and Related Machine Operators
Labourers in Processing, Manufacturing and Utilities

**Figure 10: Occupations Unique to Processing, Manufacturing and Utilities - NOC "J"**

However, not all of the above occupations are considered “skilled trades.” For the purposes of this report, we have defined “skilled” occupations using HRDC's grading skill level system level (NOC Skill Level chart, Fig. 11).<sup>54</sup> For the purposes of this report, “skilled” occupations only includes those that have a “B” or “C” skill level; occupations requiring college or technical training.

<sup>52</sup>Employment Trends Ontario Job Futures, “Overview of Ontario's Employment Patterns,” Ontario Job Futures. Human Resources Development Canada.

<http://www1.on.hrdc-drhc.gc.ca/ojf/ojf.jsp?lang=e&section=Overview&noc=0000>

<sup>53</sup>Human Resources Development Canada. National Occupational Classification. <http://www23.hrdc-drhc.gc.ca/2001/e/groups/9.shtml>.

<sup>54</sup>Human Resources Development Canada. “National Occupational Classification: Training Tutorial.” [http://www23.hrdc-drhc.gc.ca/2001/e/tutorial/NOC\\_TRAINING\\_TUTORIAL.pdf](http://www23.hrdc-drhc.gc.ca/2001/e/tutorial/NOC_TRAINING_TUTORIAL.pdf).

National Occupational Classification (NOC) Skill Level Grading System		
Skill Level (alpha)	Skill Level (digit)	Education/Training
<b>A</b> (Professional occupations)	1	University degree
<b>B</b> (Technical, paraprofessional occupations)	2 or 3	<ul style="list-style-type: none"> <li>• Two to three years of postsecondary education at community college, institute of technology, CEGEP, or trade/vocational school</li> <li><i>or</i></li> <li>• Two to five years of apprenticeship training</li> <li><i>or</i></li> <li>• Three to four years of secondary school and more than two years of on-the-job training, specialized training course or specific work experience</li> </ul>
<b>C</b> (Intermediate occupations)	4 or 5	<ul style="list-style-type: none"> <li>• One to four years of secondary school education</li> <li><i>or</i></li> <li>• Up to two years of on-the-job training, specialized training courses or specific work experience</li> </ul>
<b>D</b> (Labouring and elemental occupations)	6	<ul style="list-style-type: none"> <li>• Short work demonstration or on-the-job training</li> <li><i>or</i></li> <li>• No formal educational requirements</li> </ul>

Figure 11: National Occupational Classification (NOC) Skill Level Grading System

To determine Ontario's "skilled" manufacturing employees we determined which occupations are "skilled" for occupations within NOC structure "J" Occupations Unique to Processing, Manufacturing and Utilities (Fig. 10), and NOC structure "H" Trades, Transport and Equipment Operators (Fig. 12). Once identified, we were able to determine the skilled/unskilled breakdown within Ontario's manufacturing industry using 2004 figures (Fig. 14).

Trades, Transport and Equipment Operators (NOC "H")
Contractors and Supervisors in Trades and Transportation
Construction Trades*
Stationary Engineers, Power Station Operators and Electrical Trades and Telecommunications Occupations
Machinists, Metal Forming, Shaping and Erecting Occupations
Mechanics
Other Trades*
Heavy Equipment and Crane Operators Including Drillers*
Transportation Equipment Operators and Related Workers, Excluding Labourers*
Trades Helpers, Construction and Transportation Labourers and Related Occupations*

Figure 12: Trades, Transport and Equipment Operators (NOC "H")

## Ontario's Employment NOC "J" and "H" 2004

Source: Statistics Canada, CANSIM Table 282-0010

<b>Trades, transport and equipment operators [H]</b>	<b>904,400</b>
Contractors and supervisors in trades and transportation [H011 -H022]	89,000
Construction trades [H111 -H145]	114,600
Other trade occupations [H211 -H535]	349,900
Transport and equipment operators [H611-H737]	221,700
Trades helpers, construction, and transportation labourers and related occupations [H811 -H832]	129,300
<b>Occupations unique to processing, manufacturing and utilities [J]</b>	<b>572,500</b>
Machine operators and assemblers in manufacturing, including supervisors [J011 -J228]	479,900
Labourer in processing, manufacturing and utilities [J311 -J319]*	92,600

Figure 13: Ontario's Employment Breakdown for Trades Operators [H] and Processing [J] Occupations

The asterisk identifies those occupations, or subsets of them, that do not meet our definition of a "skilled" occupation. All of the manufacturing occupations within NOC "J", except for labourers (J311-J319), are "skilled," therefore, out of Ontario's total 1,109,000 employed workers, 479,900 are "skilled."<sup>55</sup>

To calculate the "skilled" workers in NOC "H" we added H0, H1, H2, H3, H4, H51, H52 and H62. All other were considered "unskilled." Since some of the "unskilled" occupations were grouped within the "skilled" occupations, we used a historical average to calculate the share of the "unskilled" occupation, compared to the total number, and then deleted it from our calculation which resulted in a total of 539,890 "skilled" workers in NOC "H".<sup>56</sup> However, not all of these "skilled" workers are employed in Ontario's manufacturing sector, in fact, the majority (73%) are employed in the construction industry, an only 18 per cent are employed by the manufacturing industry.<sup>57</sup>

<sup>55</sup> Total employed in NOC "J" = 572,500 (all considered "skilled") labourers 92,600 = 479,900 are "skilled"

<sup>56</sup> Statistics Canada. Labour Force 15 Years and Over by Detailed Occupation, 1996 Census Trades, transport and equipment operators and related occupations. <http://www.statcan.ca/english/census96/mar17/occupa/table1/t1p00h.htm>.

Calculation: 89,000 [H011-H022] + 114,600 [H111-H145] + 327,290 [H211-H523]\* + 9,000 [H62]\*\* = 539,890 representing the total "skilled" workers in NOC "H"

\*H53 was deleted based on the 1996 Census, 2.5% of the total occupation were "Other Installers, Repairers and Services" which are not considered "skilled" occupations. The figure for "other trade occupations" was reduced by 22,610 employees, or 2.5 per cent.

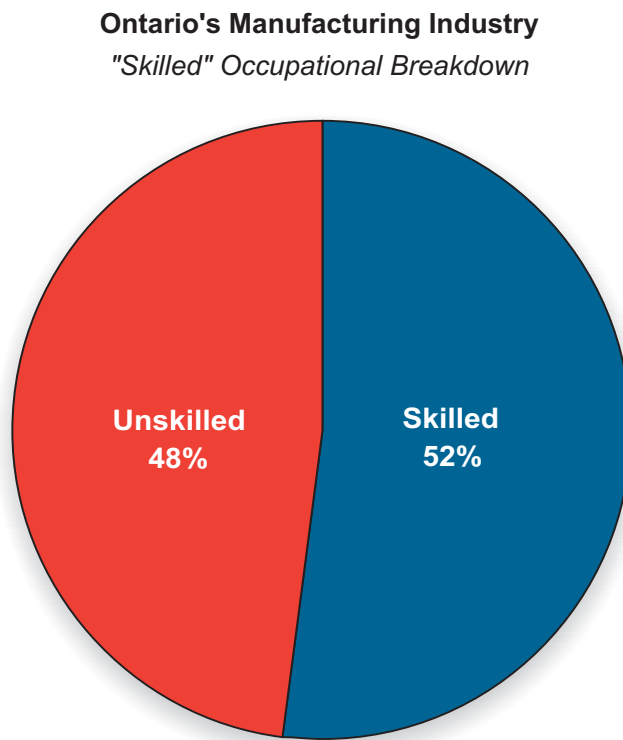
\*\*H62, the only "skilled" occupation within "transport and equipment operators" [H611-H737] was determined using the share of those occupations as determined by the 1996 Census, which showed that "crane operators, drillers and blasters" represented 1% of the total. This figure was determined by multiplying the total employed in NOC "H", 904,400 by 1% = 9,000.

<sup>57</sup> Employment Trends Ontario Job Futures, "Overview of Ontario's Employment Patterns," Ontario Job Futures. Human Resources Development Canada.

<http://www1.on.hrdc-drhc.gc.ca/ojf/ojf.jsp?lang=e&section=Overview&noc=0000>

Therefore, it was determined that there are 97,180 “skilled” trades, transport and equipment operators employed in Ontario's manufacturing industry.<sup>58</sup> This resulted in a total of 577,080 “skilled” (52%) workers in Ontario's manufacturing sector, with the remaining 531,920 being “unskilled” (48%) (Fig. 14). This figure corresponds positively with the skilled/unskilled breakdown at Ontario Power Generation (OPG). OPG has a staff of 11,000 employees, half of whom are trades people working in various roles, including control technician (electrical and instrumentation), mechanical maintainers (millwright) and nuclear operations.<sup>59</sup>

For the purposes of this report we are not including occupations such as management or finance as a “skilled” occupation, even though they would be considered skilled as they require postsecondary education. We are illustrating the necessity for “skilled trades workers and as such are counting occupations requiring college or technical training as “skilled” occupations.



**Figure 14: Ontario's Manufacturing Industry - "Skilled" Occupational Breakdown**

<sup>58</sup> Total “skilled” workers in NOC “H” = 539,890 \* 18% manufacturing share of NOC “H” employment = 97,180 manufacturing “skilled” workers in NOC “H”  
<sup>59</sup> White, Linda. “Skilled trades shortage at an all-time high,” Toronto Sun. [http://www.canoe.ca/CareerConnectionNews/050525\\_trades.html](http://www.canoe.ca/CareerConnectionNews/050525_trades.html)

# APPENDIX II: SUMMARY OF RECOMMENDATIONS

## Recommended Collective Actions

1. The Ontario government, business, labour and other stakeholders, should collectively launch a province-wide marketing and awareness campaign targeted at employers on the benefit of hiring an apprentice and investing in apprenticeship training. All stakeholders must convey a strong, clear and concise message that “investing in apprenticeship is an investment in the Ontario economy.”
2. In all marketing materials, the Ontario government, employers, parents, teachers and students must acknowledge and recognize that the third component of postsecondary education in Ontario is apprenticeship.
3. The Ontario government, business, labour and other stakeholders, should collectively launch a province-wide marketing campaign targeted at students, parents and future apprentices on the benefits of careers in skilled trades.
4. There is an opportunity for partnership among stakeholders to raise awareness about the importance of essential skills, as well as possibly integrating this within apprenticeship training and education, both at the high school and college levels. The government should also consider making the Test of Workplace Essential Skills (TOWES) mandatory in all Ontario workplaces.
5. All stakeholders need to collaborate to create and maintain a comprehensive and user-friendly web portal for apprentices and employers as a source of current information on apprenticeship and skilled trades in Ontario.

## Recommended Government Actions

6. Increase the Apprenticeship Training Tax Credit and the number of trades allowed to include more service industries.
7. Offer other types of financial and/or tax rebates or incentives to encourage both employers to train apprentices and journey persons to train and mentor apprentices. Offer a tax credit to apprentices upon completion of their apprenticeship training (i.e., Certification of Qualification).
8. The Ontario government should offer a specific tax credit for the purchase of tools and equipment for new skilled trades workers and apprentices.
9. The federal government should work with the provincial government to eliminate the two-week employment insurance (EI) waiting period for apprentices on block release from classroom training.
10. The Ontario government should adopt the Red Seal Program as mandatory for Ontario designated apprenticeship trades; work with other provinces and territories to make training and certification procedures and requirements uniform across Canada; and work with the federal government over the long-term to develop a national certification process for apprenticeship by 2008 through the Red Seal Program.

11. The Ontario government should provide the journey person who supervises and trains a new apprentice with “Certificate of Training Qualification” to the trainer.
12. The Ontario government should fund colleges at the national average and work with the Association of Colleges of Applied Arts and Technology (ACAATO) to facilitate the integration of apprenticeship training into the college operating grant.
13. The Ontario government must establish strong and sustainable technological education programs in elementary and secondary school curriculum in Ontario. The government must enhance funding for technological education and provide stable multi-year funding of at least \$12 million per year (based on the TERI program) to be used for program development, teacher training and capital costs.
14. The Ontario government should increase the current \$1,000 Ontario Co-operative Education Tax Credit to \$2,500 per work term for each co-op student and raise the rate of the tax credit on eligible expenses from 10 per cent to 25 per cent. Furthermore, the government should work with business and education stakeholders, as well as local chambers of commerce and boards of trade, to conduct a public awareness and marketing campaign for co-operative education.
15. Increase and expand the reach of the Ontario Youth Apprenticeship Program (OYAP).
16. The federal government should immediately complete its negotiations with the provincial government and create a Labour Market Development Agreement for Ontario.
17. The Ontario government should continue to support and provide funding for the certification, licensing and accreditation of internationally trained professionals and trades people, and further encourage and support cooperative programs that help to integrate internationally trained professionals and trades people into Ontario's business sector. The federal and provincial governments should work closely with business partners to assist in making businesses across the province aware of the existence of the World Education Service and other credentialing services and encourage their use.

### Recommended Employer Actions

18. Ontario employers must focus on developing a good retention strategy in order to retain and attract skilled trades workers and apprentices.
19. Ontario employers should consider offering their skilled trades workers and apprentices grant certification and mobility rights for fully trained apprentices and skilled trades workers.

### Recommended Educators Action

20. Ontario's secondary schools, as well as all elected school trustees, boards of education and guidance councillors, should receive a presentation similar to the one from Skills Canada-Ontario and receive more of an education on the careers available in the skilled trades.
21. Ontario's secondary schools should attract and hire more teachers with trade qualifications.



# APPENDIX III: ACKNOWLEDGEMENTS

The Ontario Chamber of Commerce wishes to acknowledge and thank the organizations and individuals who contributed to the OCC Skilled Trades Workshop and to this report.

First, we acknowledge the workshop delegates for generating an important dialogue about skilled trades in Ontario. The OCC wishes to thank the following individuals for their contribution this input was essential in shaping the content of this report:

- Richard Allen, Industry-Education Council of Hamilton
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- Len Crispino, President and CEO, Ontario Chamber of Commerce
- John Hertel, Exceleation (Co-Chair)
- Keith Lancaster, Canadian Apprenticeship Forum (Co-Chair)
- Allison Rougeau, Director of Operations, Canadian Apprenticeship Forum
- Gail Smyth, Executive Director, Skills Canada-Ontario
- Mark Millson, Gold Medal Recipient, 15th Ontario Technological Skills Competition
- Mary Lynn West-Moynes, President, Mohawk College of Applied Arts
- Diane Wise, Senior Manager of Strategic Policy, Ministry of Training, Colleges and Universities
- Rebecca Wissensz, President, Hamilton Chamber of Commerce

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- Maggie Moniz, Skills Canada-Ontario
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- Amy Ross, Skills Canada-Ontario
- Barbara Woolner, Skills Canada-Ontario
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## APPENDIX IV: RESOURCES & LINKS

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