



Building a Strong and Skilled Workforce for Growth



**Canadian
Manufacturers &
Exporters**

**Manufacturiers et
Exportateurs du
Canada**



About Industrie 2030

Industrie 2030 is a national strategy developed by Canadian Manufacturers & Exporters (CME) and our strategic partners to leverage the opportunities presented by the Fourth Industrial Revolution and usher in a new era of manufacturing growth in Canada.

Manufacturing is the largest and most important business sector in Canada, directly and indirectly accounting for 28 per cent of all economic activity and 27 per cent of all employment. However, the sector has been struggling in recent years and along with it, so too has the Canadian economy. Output and employment have stagnated, investment and innovation have declined, and trade deficits have ballooned.

Industrie 2030 began with a simple question: What would it take to double Canadian manufacturing output and value-added exports by the year 2030? This question was the beginning of a months-long research and consultation process that formed the heart of the exercise. We heard about the issues, challenges and opportunities manufacturers see every day while running their businesses, and what would help them grow their operations, output and sales. CME and our strategic partners held 55 community consultations across Canada that were attended by more than 750 business leaders. In addition, we received over 550 responses to our bi-annual *Management Issues Survey* to add qualitative depth to our analysis.

From these consultations emerged five major themes – areas where specific and direct action are needed if we are to achieve our goal of doubling manufacturing output and exports by 2030 and to reverse recent trends in manufacturing and in the Canadian economy as a whole. These are:

- *Building a Strong and Skilled Workforce for Growth;*
- *Accelerating Adoption of Advanced Manufacturing Technologies;*
- *Fostering Innovation, Commercialization and New Product Development in Canadian Markets;*
- *Manufacturing a Competitive Business Environment in Canada;* and
- *Increasing Sales in Domestic and Foreign Markets.*

The Industrie 2030 summary report, *Manufacturing Growth, Innovation and Prosperity for Canada* provides an overview of the issues, challenges and opportunities in each of these five priority areas and offers specific recommendations for action in each. In addition to this strategic report, additional research reports published in 2016 included *Roadmap to 2030: A path towards doubling manufacturing output and exports* (April); *Management Issues Survey 2016* (October); *Industrie 2030: A National Strategy for Canadian Manufacturing in the Digital Age* (October) and *Manufacturing and Exporting in Canada* (October).

This document, *Building a Strong and Skilled Workforce for Growth*, is one of five reports that provide detailed analysis and recommendations in each of the priority action areas. It is itself a stand-alone strategic blueprint: it identifies the specific challenges manufacturers face; it examines the factors contributing to these challenges; it highlights the impacts that these challenges pose to manufacturing in Canada; and it proposes detailed solutions.

These reports and recommendations reflect the realities of Canadian manufacturing as heard during our research and consultation process throughout the summer of 2016. We understand that these priorities can change as economic and political realities shift. However, this is not an excuse for inaction. Given the importance of manufacturing to the Canadian economy, we can and must act immediately to address the challenges and opportunities the sector faces today. The core recommendations in this report are the beginning of that process. We will adjust our priorities and actions as the changing business context requires, keeping long-term growth in manufacturing as our overarching focus.

The Industrie 2030 objective is to double manufacturing output and exports by 2030. Working together with our strategic partners, members, and all levels of government across Canada, CME is firmly committed to reaching this goal. All recommendations, reports, background information and analysis from the Industrie 2030 initiative are available at: **www.industrie2030.ca**.

Partner Summary



Don Matthew
Partner & National Sector Leader,
Industrial Manufacturing
KPMG in Canada

KPMG is proud of our partnership with Canadian Manufacturers & Exporters (CME), and pleased to sponsor their national Building a Strong and Skilled Workforce for Growth report.

It's through initiatives like Industrie 2030 that we can better understand what the current state of manufacturing looks like in Canada, get a glimpse into its future, and know what we need to do to help ensure its continued vibrancy and strength. The survey results are our action plan. They will assist manufacturers, industry, government, and partners in coming together and doing what it takes to help Canadian manufacturing achieve its goal of doubling its output and value-added exports by 2030.

At such an important time in our country's history, as we celebrate Canada's 150th Anniversary, the manufacturing industry has a rich history of its own worth celebrating. If our industry is strong, so too is Canada. Having both the availability of workers and workers with the right skills will play a big role in our industry's – and country's – future, and this is clearly on the minds of Canadian manufacturing executives.

Technology, global competition, and customer expectations are also shaping the evolution of our industry, our workforce, and what products and services we ultimately offer. The pace of change is only getting faster, and we need to do more than simply keep pace, or we run the risk of being left behind.

What really stands out in the survey is how prevalent labour shortages are today, and how this significant shortage is only expected to increase over the coming years. Without a strong and sustainable workforce, it's obvious that companies are rethinking everything from investments to locations to making the most out of technology, to name just a few. This has real implications for Canadian manufacturers' ability to compete and grow, as well as contribute to Canada's economic growth and prosperity.

While we certainly have our challenges set out for us, through consultations and conversations, the CME has set out key recommendations in response to these challenges. By helping to improve engagement and interest in careers in manufacturing, enhancing the skills of workers and training programs, and providing access to workers, as well as developing the leaders of tomorrow who have a passion for manufacturing and innovation, we'll be well on our way in our quest to 2030.

Let's take up this challenge and get there, together.

Executive Summary



Mathew Wilson
Senior Vice President
Canadian Manufacturers & Exporters

Manufacturing leaders rank skills and labour shortages as the most important issues they face today. This message came through loudly and clearly from both the Industrie 2030 consultations, as well as from the results of the 2016 *Management Issues Survey*. Specifically, executives noted deep concern both about the availability of workers as well as the skill level of existing and future employees at all levels of the organization. These skills gaps are undermining the current performance and future growth of their companies.

Today, Canadian manufacturers directly employ 1.7 million people throughout their domestic operations. The skills of the workforce range from general labourers, to skilled tradespeople, to designers, to sales and service representatives, to management. However these skills sets are constantly being redefined as technology and business opportunity reshape the business of manufacturing.

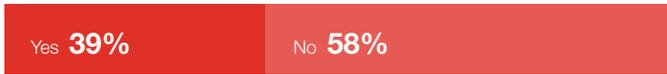
Technology is changing both the type of workers being used – a shift from general labour to specialized work – and the type of skills that are needed – from single-skilled and repetitive to multi-skilled and flexible. Technology is also impacting the type of products and services being offered, as well as how manufacturers operate; instead of merely building and selling a product in a local or regional market, businesses are now offering a range of customer services that are anchored around a manufactured product. Jobs are becoming more multi-skilled and specialized, and they are growing more valuable and less interchangeable. As a result, workers are becoming more difficult to find and harder to replace.

While Canada has among the best workforce in the world, and highly-educated and skilled population, significant gaps in talent exist. According to the results of the 2016 *Management Issues Survey*, roughly 40 per cent of businesses face labour and skills shortages today. Five years from now, close to 60 per cent anticipate such shortages.

These shortages stem from three primary sources: first, an inability to attract youth into skilled trades relevant to manufacturing; second, a disconnection between the formal training system and industry needs; and third, an aging workforce.

DOES YOUR COMPANY FACE IMMEDIATE LABOUR AND/OR SKILLS SHORTAGES TODAY? DO YOU ANTICIPATE SUCH SHORTAGES TO ARISE WITHIN THE NEXT FIVE YEARS?

Today



Within 5 years



These shortages are driving up costs, undermining productivity and eroding our global competitiveness. This is causing businesses to forego production opportunities and delay investment. In some cases, shortages of skilled workers are causing companies to consider relocating their operations outside Canada in order to sustain production. Skills shortages are also causing companies to under-invest in a range of advanced manufacturing technologies because their workers do not have the necessary technical skills, thus limiting manufacturers' ability to use these technologies to their fullest potential.

Simply put, a lack of a sufficiently-sized and skilled labour pool is directly impacting the growth of manufacturing in Canada today, and will continue to restrict growth moving forward if substantial changes are not made.

Another issue repeatedly arose in the Industrie 2030 consultations: the deficit of manufacturing leadership in Canada. While Canada does create great leaders, there are not enough of them. Leadership gets to the heart of manufacturing strategy and entrepreneurship. It affects how companies operate, how they invest, how they create new products and open new markets. It also affects how manufacturers train and develop their workforce. While Canada has a range of excellent business schools we lack capacity in training the next generation of innovative manufacturing leaders. This is directly impacting our long-term growth and prosperity in the global marketplace.

Throughout the consultations, manufacturers offered many recommendations for how to solve the twin problems of skilled-worker shortages and leadership training. However, unlike many other challenges that were raised, the solutions in this area can vary widely from sector to sector and region to region, depending on many local conditions. As a result, these recommendations also cover a wide range of potential solutions offered to support the building of a stronger skilled workforce in Canada. Furthermore, the solutions require substantial partnership between industry, government and a range of supporting partners, including labour organizations and post-secondary institutions.

To build a workforce in Canada that supports the growth of manufacturing and exporting, Industrie 2030 recommendations are:

1. Increase the effective engagement of youth, women and under-represented groups in the manufacturing labour force.

- a. Programs such as “open doors” that introduce women, youth and other underrepresented groups to opportunities in manufacturing should be expanded nation-wide, with federal and provincial governments playing an important role in encouraging and funding local school board participation.
- b. Provincial governments across Canada need to improve education standards and ensure that students cannot graduate if they lack functional basic skills in reading, writing and math. Post-secondary science, technology, engineering and mathematics (STEM) training also needs to be improved, with an increased emphasis on workplace-focused technical, social and safety skills.

2. Improve linkages between industry and post-secondary institutions.

- a. Manufacturers need to work more closely with educators to develop and fine-tune program curricula, as well as to offer feedback on the skills that recent graduates bring to the table so that curriculum adjustments can be made in a timely, relevant manner.
- b. The network of work-integrated learning programs across Canada needs, to be expanded to create better pathways to the development of work-related skills and ensure a better match between education and manufacturing workforce needs, including increased corporate participation and government support through incentives aimed at student wages.

3. Expand supports for business-led training and management leadership.

- a.** The Canada Job Grant should be expanded and improved by:
- Increasing the program funding size and making it permanent;
 - Allowing for funding of multi-year training;
 - Allowing for more on-the-job training, including LEAN Manufacturing; and
 - Standardizing processes across the country, with an emphasis on speeding up approval times.
- b.** Canadian manufacturers should work with post-secondary institutions to create new programs to support management training. The emphasis of these programs should be entrepreneurship, leadership (at the group and company level), and combined technical and management training (such as combined engineering and MBA programs).

4. Improve access to foreign-trained skilled workers.

- a.** Canada's Express Entry system should be modified with a view to lowering processing times and reducing uncertainty for businesses. More emphasis is also needed on better-educating businesses about and increase education of business about this system and how it could benefit them meet their workforce needs.
- b.** The federal government should explore ways to ensure expedited and guaranteed entry for temporary foreign workers coming into Canada on short-term work assignments, including:
- A trusted employer program that pre-approves qualifying companies to bring temporary workers into the country; and
 - A complete exemption from existing regulations for short-term work assignments.

These recommendations are not aimed at any one group. They are, in fact, a collective responsibility that we must all tackle. However, the primary focus of all these recommendations is on supporting industry and industry needs. At the end of the day, it is businesses themselves that will falter or thrive based on the availability of high-quality labour.

How labour and skills tie into the Industrie 2030 Strategic Goals:

- Abundant labour supply ensures that manufacturers are able to fulfill their production mandates and operate at their fullest potential.
- Well-trained workers are more productive, boosting business profitability and competitiveness.
- Access to a productive, skilled workforce attracts manufacturing investment to Canada.
- Productive workers generate more sales and help businesses grow.
- A high-quality, well-educated labour pool drives innovation and is vital to taking the fullest advantage of new technologies and production methods.

The problem: labour and skills shortages in manufacturing

Labour shortages are the single biggest concern facing Canadian manufacturers today. While these shortages may seem surprising in an era of flat employment growth and a jobless rate that sits above historic lows, for manufacturers the issue is very real. According to CME's 2016 *Management Issues Survey* (MIS), about 40 per cent of businesses face labour and skills shortages today. Five years from now, close to 60 per cent anticipate such shortages.

DOES YOUR COMPANY FACE IMMEDIATE LABOUR AND/OR SKILLS SHORTAGES TODAY? DO YOU ANTICIPATE SUCH SHORTAGES TO ARISE WITHIN THE NEXT FIVE YEARS?

Today



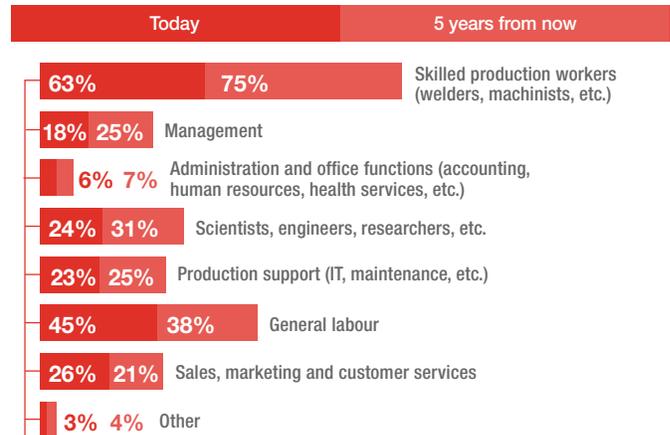
Within 5 years



These shortages are especially acute in the skilled trades. Of those MIS respondents who reported present-day labour shortages, 63 per cent said they could not fill all their vacant positions for skilled production workers such as welders, machinists, electricians and so on. Five years from now, more than three quarters of businesses expect to have a hard time filling skilled trades positions.

However, labour shortage issues extend well beyond the skilled trades. In fact, manufacturers report that their next biggest challenge on the labour supply side is finding enough general labourers. Nearly 45 per cent of businesses with job vacancies cannot find such workers.

IN WHAT OCCUPATIONS DOES YOUR COMPANY FACE THE MOST URGENT LABOUR/SKILLS SHORTAGES TODAY? FIVE YEARS FROM NOW?



These shortages have major ramifications for the manufacturing sector and for Canada's economy as a whole. Primarily, without a steady supply of labour – skilled, general labour and management – companies have difficulty meeting existing customer production demands and, as such, are unable to expand output and find new customers. This results in slower growth, not just for individual companies, but for the entire economy.

Contributing Factors

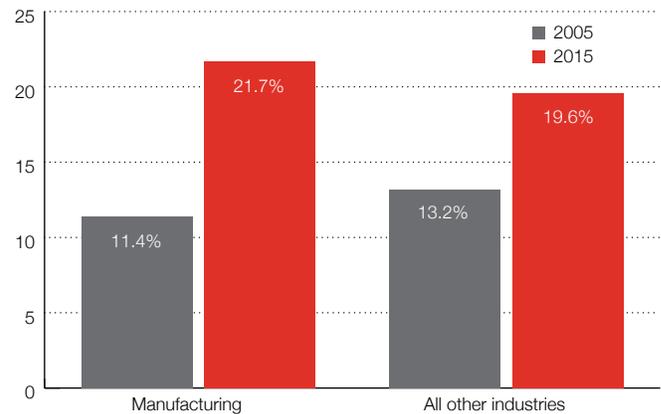
A wide range of factors contribute to labour shortages in manufacturing. Some are social in nature. Others relate directly to the education system, while others are the result of manufacturers' own actions. Some of the more significant factors are described below.

First among these is that Canada has a longstanding cultural bias that values university education over the skilled trades. From a young age, Canadian students are led to believe that a university education will provide a good job and an attractive career path. University is where, we are told, smart and upwardly-mobile students go. This bias endures in spite of the high wages enjoyed by many skilled workers, not to mention the relative ease with which most are able to find work.

A major reason why that view is so enduring is that manufacturing continues to suffer from a perception problem. Many Canadians still believe that a job in manufacturing is one filled with monotonous assembly-line tasks, or one where the work environment is dark, dirty and dangerous. These lingering perspectives bear little resemblance to the modern-day innovative and technologically-advanced manufacturing operation. They do, however, deter youth and, especially, women from pursuing careers in manufacturing-related fields.

Another systemic issue is the ageing population. The manufacturing workforce is older and ageing more rapidly than in other industries. In 2015, nearly 22 per cent of manufacturing workers were 55 years of age or older. That compares to 19.6 per cent in all other industries. While this difference may seem small, it also means that manufacturers can expect heavier workforce turnover in the coming years, adding further to the challenges in filling vacant positions. On top of that, the loss of experienced workers creates problems in areas like workforce transition, succession planning, and institutional memory and experience.

THE MANUFACTURING LABOUR FORCE IS RAPIDLY AGEING
(% of the labour force aged 55+)



Industrie 2030 roundtable participants also had concerns about the general quality of education that students are receiving in the public school system. There was widespread agreement about the importance of education, many participants were not happy with the quality of the recent graduates that were arriving on their doorstep. They cited a range of concerns, including, basic literacy or numeracy skills, the ability to function in a team environment, and an inflated sense of entitlement.

In addition, several participants noted that the school system is too narrowly-focused on programs that develop one or two specialized skills rather than a range of cross-functional abilities. A flexible workforce is critical for Canadian businesses to be able to innovate and compete on a global scale. This flexibility is especially important in an era of rapid technological change. As manufacturing evolves, workers need to have a broad range of skills – especially the ability to learn, adapt and be flexible in their skill sets – in order to continue to make a valuable contribution.

Another issue related to education is that linkages between post-secondary institutions and the business community are not as tight as they should be. Post-secondary institutions need input from future employers to ensure that the programs they offer are relevant and up-to-date. Businesses need to be involved in curriculum and program development to ensure that graduating students have the right skills to seamlessly integrate into the manufacturing workforce.

These underdeveloped linkages are also contributing to another problem: Canada does not have an advanced network of work-integrated learning (WIL) programs. WIL programs are those which incorporate a workplace component into a formal education program. They include apprenticeships, internships, co-op programs and a range of others. Countries like Germany and South Korea are world leaders in blending formal education with practical on-the-job experience. The results speak for themselves: in those countries, student participation is high, skills shortages are far less of an issue, and businesses have a direct say in developing the skills they need from future employees.

Canadian manufacturers are also contributing to the problem of labour and skills shortages. While labour market training statistics in Canada under-report many types of on-the-job training, the fact remains that, compared to many other countries, Canadian businesses under-invest in the training and skills development of their workforce. As a result, many companies find themselves less able to invest in, introduce and effectively use advanced manufacturing technologies because their workers do not have the required skills to use those technologies effectively. According to the Canadian Policy Research Networks, less than 30 per cent of adult workers in Canada participate in job-related education and training, compared to about 35 per cent in the United Kingdom and close to 45 per cent in the United States. Not only that, but evidence shows that businesses are investing less, not more, in workforce training. A 2014 study by the Conference Board of Canada showed that Canadian organizations have decreased spending on workforce training and skills development by nearly 40 per cent since the early 1990s.

It is worth emphasizing that this is not a comprehensive list of factors contributing to labour and skills shortages. A host of others play a role as well, including stresses created by localized economic booms and megaproject development. In addition, differences in provincial regulations, qualifications standards and training requirements can create significant barriers to mobility, preventing workers from responding to labour market signals in other provinces. Finally, the immigration system has, in the past, helped to fill these pockets of specialized labour shortages, but that too is not sufficient to meet business' needs.

Impact of Labour and Skills Shortages

Through the Industrie 2030 consultation process, manufacturers painted a clear picture of the consequences of labour and skills shortages. The most obvious of these is the impact on wages and salaries. Manufacturing businesses offer high-quality jobs and pay wages that are well above the national average. However, supply pressures are distorting the labour market, driving up wages to unsustainable levels and eroding the competitiveness of Canadian manufacturing.

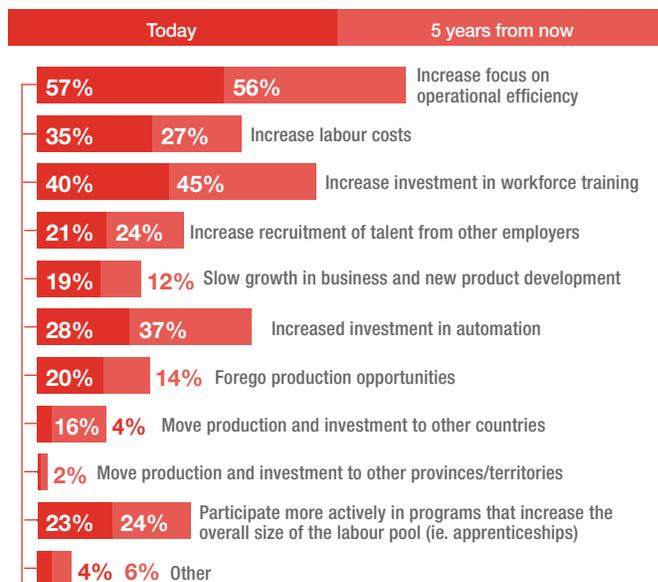
The most obvious example of this is the cautionary tale of Alberta. Until recently, a longstanding economic boom fuelled by oil sands development created major labour shortages across the province. Manufacturers were competing with deep-pocketed oil companies for scarce workers. As a result, average manufacturing wages in the province soared. In 2005, average weekly earnings for Alberta manufacturers were about five per cent above the national average. As labour shortages became more acute, this differential expanded. By 2015, Alberta-based manufacturers were paying a 20 per cent premium to operate in the province.

IMPACT OF MANUFACTURING LABOUR SHORTAGES IN ALBERTA

(Alberta mfg wages as a % of the national average)



HOW HAS YOUR BUSINESS RESPONDED TO EXISTING LABOUR/SKILLS SHORTAGES? HOW WILL YOU RESPOND FIVE YEARS FROM NOW?



These labour shortages and associated wage pressures are affecting the health of manufacturing in Canada. The 2016 *Management Issues Survey* asked manufacturers how they were coping with current and anticipated labour shortages. While the most common responses were an increased focus on improving operational efficiency and investing more in workforce training, there were some concerning results as well. Specifically, one in five businesses are foregoing production opportunities because of labour and skills shortages. A similar share said that shortages are limiting growth in business and new product development. Most concerning, 17 per cent stated that if the labour and skills gap is not closed within five years, they will shift production outside of Canada.

Access to skilled workers affects not only the efficiency of current operations, but influences future investment decisions as well. *Management Issues Survey* results show that the availability of skilled labour and a work-ready workforce is the single most important factor that businesses consider when deciding where to invest. If the manufacturing sector in Canada is to prosper in future, this issue needs to be addressed. If it is not, foreign investment will pass Canada by and domestic companies will stagnate or relocate to other countries.

Solutions

As with any complex and nuanced issue, there is no magic bullet solution or quick fix to the problem of labour and skills shortages in manufacturing. However, through the Industrie 2030 consultation process and 2016 *Management Issues Survey* responses, manufacturers gave valuable insight on what steps could be taken to turn the corner and work towards a long-term solution to this issue.

WHAT ARE THE MOST IMPORTANT FACTORS YOUR BUSINESS CONSIDERS WHEN DECIDING WHERE IN CANADA TO INVEST?



The following recommendations represent initial steps and broad directions. Over time, additional needs will be identified, policy suggestions refined, and adjustments made.

1. Increase the effective engagement of youth, women and under-represented groups in the manufacturing labour force.

One of the most common issues raised in the Industrie 2030 roundtable discussions was the need to attract more aboriginals, youth, women and other under-represented segments of the population into manufacturing professions. This is critical to help companies grow and to replace the existing and ageing workforce.

There are two related challenges facing Canadian industry in this regard. The first is that a bias towards university education and misperceptions about the nature of manufacturing work are pushing students into other fields. This perception of manufacturing needs to be changed. The second challenge is the poor STEM and basic literacy education Canadian youth receive.

Addressing the Bias against Manufacturing Employment:

The best way to address this bias is to provide students at a young age with accurate information about what a manufacturing job looks like, what the specific opportunities are, and the expected wages that come from a career in manufacturing. The reality is that careers in manufacturing are not what they were 10, 20 or 50 years ago. Jobs are highly skilled, often high-tech, and always high-wage. In fact the average wage in manufacturing is nearly \$75,000 annually, which is well above national average for all occupations. Skilled trades wages can be much higher, still.

There are a number of programs that exist to help address these challenges that should be copied across the country. These include (but are not limited to):

- “Open doors” programs to take youth as early as grades 9 and 10 to tour manufacturing plants to see first-hand the opportunities that they offer.
- Regional programs that provide youth and their parents with detailed information about career and wages opportunities in manufacturing, as well as information for those about to complete high school regarding potential career paths through post-secondary institutions.
- High-school-level competitions that include the design and manufacture of a products using 3-D printers or other tools.

This is one area where manufacturers must be engaged in the solutions. Industry should sponsor more local competitions. They should more readily open their doors to local high-school students to show off their facilities and products. Governments also have a critical role to play: Encouraging and funding school boards to operate these outreach activities. They should also be funding the activities of third party organizations who are attempting to conduct these promotional actions.

Women, Aboriginals and recent immigrants are also affected by cultural biases that prevent more active participation in the manufacturing workforce. In particular, much more attention needs to be paid to addressing the low representation of women in manufacturing jobs. In fact, women represent less than 10 per cent of the manufacturing workforce across Canada. To address this shortcoming, CME is launching a National Council on Women in Manufacturing that will aim to reverse these realities and dramatically increase the number of women in manufacturing and in STEM careers more generally.

Recommendation 1a: Programs such as “open doors” that introduce women, youth and other underrepresented groups to opportunities in manufacturing should be expanded nation-wide, with federal and provincial governments playing an important role in encouraging and funding local school board participation.

Addressing STEM Education

Industrie 2030 participants were in widespread agreement that the public school system needs to focus more on basic literacy and numeracy, as well as essential life and workplace skills. Simply put, the education system is doing a disservice to everyone by graduating students that cannot read, write or do math at an appropriate level, or that lack other basic social and workplace skills.

This viewpoint was not isolated to a specific sector or region; it were consistent across the country. Several companies reported that they rejected roughly 80 per cent of Canadian-born and educated applicants for general labour jobs simply because they lacked basic skills to the point that they would be a safety danger to themselves and their co-workers. The quality of basic education urgently needs to be improved.

Companies also widely reported that even those graduating with post-secondary degrees in STEM-related fields lacked sufficient skills and expertise in their respective areas. Many observed that it takes two years of on-the-job training before new graduates become productive assets to the business. While companies expect that a certain amount of on-boarding and other on-the-job-training is a regular part of the hiring process, there is presently such a distance between the skills and attitudes that many new graduates bring to the table and what is required on the job that businesses find it too daunting to try to bridge the gap.

A lack of effective STEM training also undermines students’ willingness to explore skilled work and technical trades opportunities. This not only limits their career options, but it adds to the cost of doing business in Canada, restricts economic growth and further deters youth participation in the manufacturing workforce.

In short, manufacturers believe they need to spend an ever-increasing amount of money, time and resources on plugging the growing number of holes in the education system in Canada. Whether it is high school or post-secondary education, students should not be graduated if they cannot meet basic standards. In the case of STEM training, governments must reinvest and refocus spending throughout the school system to improve the skill sets of the next generation of workers. We understand that it can take years for such a shift to produce results, which is why it is critical to start immediately.

Recommendation 1b: Provincial governments across Canada need to improve education standards and ensure that students cannot graduate if they lack functional basic skills in reading, writing and math. Post-secondary STEM training also needs to be improved, with an increased emphasis on workplace-focused technical, social and safety skills.

2. Improve linkages between industry and post-secondary institutions.

Closer ties between industry and the academic community are critical to ensuring that new graduates have relevant and up-to-date skills – an issue of particular concern given the rapid pace of technological change in manufacturing. Enhancing these linkages also supports the broader innovation agenda by creating ties through the students for enhanced research and development activities.

When businesses examine what is currently being taught in schools, they are sometimes surprised to discover that the training students receive – especially in areas like computer programming, software and digital technologies – is out-of-date compared to established business practice and the current use of technology.

At the same time, when businesses do want to work with post-secondary institutions, they are often frustrated. While there are some excellent examples to the contrary, too often businesses are not viewed as full partners in the education/training process but simply funders of scientific research.

Improved linkages between post-secondary institutions and manufacturers need to be developed to support the growth of the manufacturing sector in Canada. Manufacturers need graduates that have appropriate and up-to-date technical skills, and are able to step into a job and contribute as soon as possible. There are two critical ways this should happen:

Recommendation 2a: Manufacturers need to work more closely with educators to develop and fine-tune program curricula, as well as to offer feedback on the skills that recent graduates bring to the table so that curriculum adjustments can be made in a timely, relevant manner.

Recommendation 2b: The network of work-integrated learning programs across Canada needs to be expanded to create better pathways to the development of work-related skills and ensure a better match between education and manufacturing workforce needs including increased corporate participation and government support through incentives aimed at student wages.

3. Expand supports for business-led training and management leadership.

While the post-secondary education system plays a crucial role in equipping students with the skills they need in a job setting, manufacturers also need to take responsibility for addressing their own workforce needs. Certain skills cannot be learned in the classroom and, in many cases, there is no substitute for on-the-job training.

WHAT ARE THE MAIN ISSUES PREVENTING YOUR COMPANY FROM INVESTING MORE IN WORKFORCE TRAINING?



There are two critically important elements to the workforce training challenge. The first is continuous improvement on the technical side – ensuring that workers not only enhance their general skills, but also expand those skills to adapt to new technologies, equipment and processes. The second element is enhancing leadership training for the next generation of manufacturing management.

There are a number of obstacles that prevent more workplace training from taking place. First among these is a general dissatisfaction with the training programs currently available. When asked in the 2016 *Management Issues Survey* about the main issues preventing them from investing more in workforce training, the highest response (37 per cent) was that there is a lack of existing training programs that meet businesses' specific needs.

Another major issue for manufacturers is concern about the return on investment for workforce training. Investing in workers creates more productive and more valuable employees. However, some companies have an incentive to free ride: rather than invest in training themselves, they will wait for someone else to do the training and then recruit that employee. The end result is that businesses have a strong disincentive to invest in training because they may end up paying the costs but not realize the benefits.

Government incentives can play a critical role in addressing this challenge; supports for workforce training help to offset the risk and uncertainty associated with making those investments. When manufacturers were asked in the MIS about what more governments could do to help them address labour and skills shortages, the top response was to increase direct supports for training new and existing workers.

This speaks to another challenge: government support for workforce training has been sporadic and inconsistent. Over the years, federal and provincial governments have introduced dozens of pilot projects or temporary programs to assist businesses in this area. However, these programs are seldom funded for more than a few years, or they focus on training within a specific industrial sector. A more consistent, long-term and broad-based system of government support is needed.

The solution to these problems is to expand the Canada Job Grant (CJG). Manufacturers generally support this program because it does a good job of addressing many of the issues described above: it offsets two thirds of the cost of training; it reduces the risks associated with training expenditures; and it gives businesses the freedom to pursue the training most suited to their individual needs.

However, with the benefit of a few years' experience with the program, it is clear that some adjustments to the CJG are necessary. Based on the feedback and input received, we recommend that:

Recommendation 3a: The Canada Job Grant should be expanded and improved by:

- **Increasing the program funding size and making it permanent;**
- **Allowing for funding of multi-year training;**
- **Allowing for more on-the-job training, including LEAN Manufacturing; and**
- **Standardizing processes across the country, with an emphasis on speeding up approval times.**

Management Training

Because of its cultural roots, the issue of management training is more complicated than technical and basic skills training. One of the most common observations made about business culture in Canada is that while we are world-class entrepreneurs, engineers, service providers and problem-solvers, we lack the ability or interest in creating large, world-class companies. As an example, there are very few examples of Canadian business leaders who have built a truly global business out of a small- or mid-sized company. A far more common scenario is that of the Canadian entrepreneur who identifies a niche product, gap or need and builds a small business to meet that need. The company expands up to a certain point but is then bought out by a foreign enterprise.

Statistics on business establishments in Canada confirm that this is more than just a story we tell ourselves. Generally speaking, Canada has a high proportion of small- and medium-sized enterprises, relatively few home-grown large companies, and a significant degree of foreign ownership. This is a major factor behind the relatively low levels of research and development, innovation and commercialization that take place in Canada.

One of the reasons why Canada has a culture of entrepreneurship, but not of risk-taking or creating global companies is a lack of world-class management training. Business operations become more complex as a company grows. An entrepreneur can be successful at building a business up to a certain size, but at a certain point in that process, management skills become more important than technical know-how. Without a strong knowledge of business management theory and techniques, that person is unable to take the next step. It then becomes easier to sell than it is to grow.

To address this problem, we recommend a substantial expansion of the quality and availability of management training available for Canadian manufacturing leaders. This training should be done through existing post-secondary institutions with the full support and involvement of the manufacturing sector.

Recommendation 3b: Canadian manufacturers should work with post-secondary institutions to create new programs to support management training. The emphasis of these programs should be entrepreneurship, leadership (at the group and company level), and combined technical and management training (such as combined engineering and MBA programs).

In addition we must support the growth and development of entrepreneurs and smaller companies through direct support programs. The federal government has created accelerator and incubator programs that could fill some of this role. Private sector programs should also be created to link experienced manufacturing executives with new executives and entrepreneurs for ongoing and personal guidance and support.

4. Improve access to foreign-trained skilled workers.

Manufacturers overwhelmingly prefer to hire local workers for their operations, at all levels of the company. However given some of the challenges outlined above, this is not always possible.

Foreign-trained talent has always been critical to supplementing the domestic workforce, especially when local workers are unavailable or unwilling to take the job. However, in light of the chronic shortage of skilled workers described above, combined with the time it would take to improve the education system and increase enrolment, the need for foreign-trained workers is all the more urgent.

There are two priorities in this regard: Canada needs to continue to make improvements to the immigration system and increase access to temporary workers as needed.

Immigration

Immigration is critical to Canada's long-term economic health. As Canada's population continues to age and birth rates remain low, we need foreign workers to replace the existing workforce. However, increasing the number of available workers is not enough. The skills of the immigrant population must be aligned to the needs of the business community. The Express Entry system that was recently introduced in Canada is a positive move in this regard. It catalogues the skills of potential immigrants and allows Canadian companies to hire directly from the immigrant pool based on their specific needs.

While the Express Entry system is generally supported by the manufacturing community, there is also room for improvement and increased awareness. In our Industrie 2030 consultations, most companies simply did not have enough information about the program and how it could be used to help meet their labour needs. Those that were aware of the system wanted to see it become quicker and more responsive to their needs. They felt that it was taking too long to process potential immigrants because applications tended to get bogged down in the labour market assessment phase, creating too much uncertainty.

Recommendation 4a: Canada's Express Entry system should be modified with a view to lowering processing times and reducing uncertainty for businesses. More emphasis is also needed on better-educating businesses about and increase education of business about this system and how it could benefit them meet their workforce needs.

Temporary Workers

Temporary workers are required for a variety of purposes in manufacturing. However, the system remains a source of frustration for many in industry.

Most of the need for temporary workers stems from short-term business requirements associated with foreign direct investment or the purchase of new machinery and equipment – installation, repair and service personnel coming from another jurisdiction to assist in setup. These individuals are entering Canada to support the growth of new manufacturing activity and the efficient operation of existing facilities. Yet, they are often blocked from entry by eager border agents who believe they are protecting Canadian jobs. This is simply not the case. Companies bringing temporary labour into the country to install or fix machinery and equipment are not replacing Canadian jobs, they are enabling them.

Manufacturers reported similar challenges in cases where senior executives from their parent companies were required to enter the country temporarily, and in cases when foreign workers were needed to conduct joint research and development activities in Canada. Businesses in these positions should not have to endure an onerous application and regulatory process to allow temporary foreign workers into the country.

There are two potential solutions to these challenges. The first is to introduce a streamlined process for temporary entry of business personnel in the form of a trusted employer program. Such a program could be similar to existing trusted importer programs for the movement of cargo. The federal government would pre-approve qualifying companies to bring foreign workers into the country on an as-needed basis, provided they are knowledgeable about, and comply with, all existing Canadian laws and regulations. Such an initiative would eliminate the uncertainty of border processing for those workers, and thus free up border agent resources to focus on legitimate security concerns.

The second option would be for the federal government to introduce a program allowing for a complete exemption from existing temporary entry regulations for short-term work assignments (for example, no more than two months total per calendar year) regardless of the type of work being conducted. Such an approach would preserve the intended function of temporary foreign workers as a pressure valve for isolated labour market needs, rather than a permanent solution to labour shortages.

Recommendation 4b: The federal government should explore ways to ensure expedited and guaranteed entry for temporary foreign workers coming into Canada on short-term work assignments, including:

- **A trusted employer program that pre-approves qualifying companies to bring temporary workers into the country; and**
- **A complete exemption from existing regulations for short-term work assignments.**

Conclusion – Tracking Progress

Labour and skills shortages are the most important challenges facing Canadian manufacturers today. Rapid technological advancement is changing both the nature of manufacturing employment as well as the skills that are needed. That, combined with a rapidly-ageing workforce and relatively few new entrants into the labour market, is creating significant challenges for Canadian manufacturers. Addressing these issues is critical to attracting new manufacturing investment to Canada, maximizing the benefits of new technologies, and improving productivity. This paper sets out a path to achieve that goal.

However, success is not measured by whether or not the recommendations set out in this report are implemented; it is measured by the results that they achieve. For this reason, the Industrie 2030 strategic plan has outlined seven KPIs that we will track over the next 15 years to monitor our progress. Of these seven, only two relate directly to addressing labour and skills shortages. However, they are potentially the most important benchmarks in the entire Industrie 2030 plan. They are:

- **The share of businesses reporting labour and skills shortages in CME's biannual *Management Issues Survey* will fall by two per cent every two years from the current 34 per cent to 20 per cent by 2030.**

Labour and skills shortages regularly top the list of the most important challenges facing Canadian manufacturers. A decline in the share of businesses reporting shortages as a top concern is indication that the quantity and quality of the available labour force is increasing.

- **Canada will be among the top two G7 countries for manufacturing productivity growth in every five-year period ending in 2020, 2025 and 2030.**

Next to investment in technology, machinery and equipment, skilled labour is probably the most important driver of productivity growth. Strong productivity gains are an indication that manufacturers have the right workers in place to improve their long-term competitiveness.

Access to top-quality labour and skills is critical if Canadian manufacturers are to grow and compete internationally. However, the evolving technological landscape has already dramatically altered labour needs for Canadian manufacturers. Those needs will undoubtedly change even further – in new and unpredictable directions. This will create new challenges that will require new solutions and responses.

Our recommendations for address labour and skills shortages will evolve alongside manufacturers' changing workforce needs. However, our commitment to long-term results is unwavering. If manufacturers have the workers they need when they need them, it will remove a significant obstacle to our goal of doubling manufacturing output and exports by 2030.

Who We Are

Since 1871, Canadian Manufacturers & Exporters has been fighting for the future of Canada's manufacturing and exporting communities and helping them grow.

The association directly represents more than 2,500 leading companies nationwide. More than 85 per cent of CME's members are small and medium-sized enterprises. As Canada's leading business network, CME, through various initiatives including the establishment of the Canadian Manufacturing Coalition, touches more than 100,000 companies from coast to coast, engaged in manufacturing, global business and service-related industries.

CME's membership network accounts for an estimated 82 per cent of total manufacturing production and 90 per cent of Canada's exports.

www.cme-mec.ca | www.industrie2030.ca

Strategic Partners

CME's strategic partners have helped us throughout this process by defining the agenda and supporting the research and consultation exercise. Like CME, they believe that a strong Canada can and must have a strong manufacturing sector at its heart. From business associations to manufacturers to key service providers, these groups have been instrumental in creating this action plan and in supporting the growth of manufacturing in Canada.

A special thanks to:



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