Information and Communication Technology (ICT)

Financial Services

Manufacturing

Skill Gaps, Labour Shortages and Challenged Job Seekers

in Key Employment Sectors of York Region

FULL REPORT

SECTOR PARTNERSHIP PLANNING PROJECT
November 2017

Workforce Planning BOARD
OF YORK REGION & BRADFORD WEST GWILLIMBURY
wpboard.ca

Acknowledgements

The author and the Workforce Planning Board of York Region and Bradford West Gwillimbury would like to gratefully acknowledge the support, inputs and perspectives contributed to the research for this project by the following employers, industry associations and community services agencies:

- Arthur J. Gallagher & Co.
- Aurora Scientific Inc.
- BAASS Business Solutions Inc.
- Buchner Manufacturing Inc.
- Business Development Bank of Canada
- Canadian Manufacturers and Exporters Association
- Chaggares & Bonhomme Chartered Professional Accountants
- CleanRiver Recycling Solutions
- Clover Tool Manufacturing Inc.
- Commport Communications
- Compugen
- Desjardins Property and Casualty Insurance
- E & W Development Centre
- EmergiTEL
- Evron Computer Systems Corp.
- Freedom 55 Financial
- Gieseke+Devrient Mobile Security
- Hibar Systems Limited
- Honeywell Building Solutions
- Huawei Technologies Canada
- IBM Canada Limited
- Investors Group
- King Cole Ducks Limited
- KPMG Management Consulting Services
- Kraft Burger LLP
- Laipac Technologies Inc.
- Lotek Wireless Inc.
- Lott Accounting
- LSC Communications
- Manpower Group Corporation
- Nella Cutlery and Food Equipment
- Neopost Canada
- Nexya Canada Inc.
- Onico Solutions
- Ontario Centres of Excellence
- Ontario Manufacturing Learning Consortium
- PTC Recruiting
- Robert Half
- Royal Bank of Canada
- TechConnex
- The Taligent Group Inc.
- Toronto Financial Services Alliance
- Tree Frog Inc.
- Vertex Precision Manufacturing

- VPI Working Solutions
- The Region of York Community Health and Services
- yorkworks Employment Services
- RNC Employment Services
- Women's Centre of York Region
- Welcome Centre Immigrant Services
- Thornhill Employment Hub
- Job Skills
- Georgina Trades Training Incorporated
- Literacy Council York-Simcoe
- JVS Toronto
- YMCA Employment Services
- COSTI
- The Region of York Planning & Economic Development
- Seneca College
- York University
- NPower Canada

Table of Contents

Project Description and Research Methodology

SECTION 1

The Workforce Planning Board of York Region and Bradford-West Gwillimbury (WPBoard), were favoured with funding under the Sector Partnership Planning Program to undertake a project with the following goals:

Within the Information and Communication Technology (ICT), Manufacturing and Financial Services sectors of York Region;

- determine the employee skills and capabilities the Region's employers need now and for the future,
- determine the employee skills and capabilities currently available within their firms and in local labour markets,
- determine development and training strategies to address identified gaps and make use of local educational institutions, employment service providers and other community/sector partners

Concurrently, within York Region and neighbouring labour markets serving York Region Employers;

- identify and characterize the groups of "challenged" labour market supply-side participants, (job seekers), specifically in terms of youth, (aged 15 – 29), experienced workers "displaced" from declining industries, whose knowledge and skills are no longer current, and Internationally Educated Professionals seeking economic opportunity in Canada.
- determine typical skill levels in these groups, and "gaps" with respect to the needs of York employers in the three segments identified above, and
- identify development, training and support programs which may be delivered through local or provincial agencies, educators and service providers, to help these "challenged" job seeker groups meet some of the employer talent needs and find meaningful work in doing so.

The WPBoard partnered with the Region of York, York University and Seneca College in this initiative. Both primary and secondary research activities were undertaken in order to achieve these goals.

Primary Research

Primary research consisted of directly engaging York Region employers in the three target industry sectors, challenged job seekers, employment service providers and other local community service agencies.

Employers: WPBoard engaged with over 50 employers in a variety of methods including face-to-face consultation meetings, one-on-one telephone interviews and electronic surveys. All industry sectors were well represented, and results and feedback from this engagement has been summarized in appropriate sections of the full report.

Youth: Youth is one of the three "challenged" job seeker groups under study. We engaged with over 120 young job seekers through an online survey distributed to clients of local employment service and training providers. The online survey contained 22 questions developed to solicit the information as defined in our goals. Results of the survey have been comprehensively reported in the full report.

Displaced Workers: Utilization of Employment Ontario Service Providers feedback regarding displaced workers provided WPBoard with excellent feedback about their job search challenges. Our literature investigation into this group also revealed good amounts of important and useful information, which contributed heavily to our recommendations.

Internationally Educated Professionals / Skilled Immigrants: There were two direct engagements with a total of 78 Internationally Educated Professionals (IEP's) as part of our primary research. One was a Workforce Planning Board labour market workshop attended by skilled immigrants, which formed part of a larger IEP conference. The second was an online 17 question survey that was responded to by IEP's through Welcome Centre Immigration Services, Employment Ontario Employment Services and Bridging Programs. Results of the survey are comprehensively reported in the full report.

Community Stakeholders: There was additional engagement with York Region community stakeholders, such as Employment Service Providers, Literacy Councils, Welcome Centres, School Boards, agencies serving Youth, York Region's Community Services team, and Training Agencies. A meeting was held and WPBoard consulted them on a full range of subjects related to their experiences with the "challenged" groups".

Secondary Research

Secondary research consisted of an extensive survey and review of current, (and almost current), studies, reports, articles and papers written by various authorities on the particular industries, labour markets, talents and skills under review. Particularly helpful or interesting material too extensive to include in the main body of this report have been attached as Appendices in the full report. All references used or quoted have been cited within the report, and at the end of the full report under "References".

The report is designed to serve seekers of high-level summary information in the "Executive Report" (Section 2). For those seeking more specifics and detail, the full report includes the Executive Report and greater detail in Sections 3 through 10.

Sections have been designed to be somewhat stand-alone, and the entire report is intended as a reference as well as a project status summary.

Validation

In an effort to obtain an objective "second opinion", as to what was learned by the Project Team on this initiative, the services of a second consultant was arranged to undertake limited parallel research into skill gaps and labour shortages in our 3 target sectors in York Region. The consultant was advised of the information that was sought, and they undertook telephone interviews or conducted surveys with employers. Their findings are included in Appendix H of the full report.

Executive Report

SECTION 2

2.1 Background

Canadian and York Region Information and Communications Technologies, Manufacturing and Financial Services customer and labour markets are undergoing rapid change, primarily because rapidly advancing technologies are "changing the game" in terms of customer demands and the kinds of talent employers need to grow and compete. The kinds of jobs that must be filled are changing. Employees need to become "digitally literate", and expand their capabilities to capture new technical as well as "soft" people and business skills. However, both new entrants to the workforce and existing workers are struggling to acquire the knowledge and skills employers' need. Colleges and Universities are struggling to maintain the pace of change and align programs to teach skills in demand. Employers have apparently decreased their investments in employee training over the last two decades.

To make things more challenging, older workers, who form a large part of the workforce, will be retiring in the next decade, more quickly than they can be replaced with the right kind of talent. At the same time, several groups of workers are under-represented and under-utilized in the labour market, including young people, women, indigenous peoples, "displaced workers" and people with disabilities. Labour Market Information (LMI) available to students, educational institutions and employers is limited, disorganized and hard to find. As a result of all these issues, serious and costly "skill gaps" are developing in the market place, along with a growing labour shortage for key occupations.

Part of the solution will be to increase the numbers of skilled immigrants coming into the workforce. "Millennials", with their great technical aptitudes and new ways of thinking, will be another part of the solution. Frequently recommended measures to address these challenges are the following;

- develop better Labour Market Information,
- improve connections between educators and employers to better align curricula,
- promote "STEM" (Science, Technology, Engineering and Mathematics) and "Digital Literacy" in all phases of education,
- increase the range and depth of experiential learning programs,
- help under-represented groups to increase their workforce participation, and
- simplify access to and use of government training and employment support programs.

The Sector Partnership Planning Grant program reflects government awareness of the situation and proposals as outlined above, and an attempt to move forward "at ground level" with specific markets, specific institutions, and specific outcomes in terms of tackling the Skills Gaps, Skills Mismatches, the resource under-utilization and the disconnects among labour market stakeholders. As such, it is an opportunity to make constructive change happen.

2.2 Information and Communication Technologies (ICT)

ICT is the *industry* that produces anything and everything related to information and communication technologies, in the forms of both products and services, everything "tech" and "high tech". ICT also refers to a set of *occupations.* Workers in these occupations are employed in both ICT and non-ICT firms.

There are 41,822 ICT firms in Canada, 22,469 in Ontario, and 4,522 in York Region. The great majority at each level are in the "Computer systems design and related services" sub-sector. Depending on geography, 73.5% to 83.5% of these firms employ from 1 to 4 people. Canada's "Digital Economy" employs 1,389,000 people, of which 730,000 are ICT workers in Non-ICT industries, 487,000 are ICT workers in ICT firms, and 168,000 are Non-ICT workers in ICT companies. Immigrants make up 394,000 of Canada's ICT workers. The number of ICT professionals living in York region is approximately 65,000. The number working in the Region is approximately 50,000.

The industry in Canada is alive and growing well, and has great opportunity for continued expansion. It is at the centre of rapidly evolving technologies that are transforming business and daily life around the globe. However, it faces several near and medium-term challenges that must be overcome somehow.

There is currently strong industry demand for highly technically qualified employees, and that demand is forecast to accelerate beyond current supply. While ICT as an industry sector has its challenges, total labour market demand for *ICT professionals* for all *other* industry sectors is even larger, and growing as quickly. Across the country, about 216,000 ***new*** jobs in ICT work will have to be filled, 88,000 of those in Ontario. Driving this demand growth are both strong customer demand for new technology-based solutions, and strong "internal" industry demand for process automation, productivity multiplication, and "digital adoption" by and for all employees. Our education systems are not yet providing students all the skills the labour market demands, and even if they were, they could not graduate enough people to meet the demand. "Under-represented groups", as described earlier, represent an excellent source of workers to partially fill the gap. More skilled immigrants are another.

The numerous jobs and skills in high demand in the ICT sector both on a national and a local (York Region) level, have been identified in Sections 3 and 6 in the full report. The challenge in addressing the short supply of long lists of industry-specific technical skills *just for ICT,* is that there are not just two or three skills to be found. The list is long, and constantly changes with time.

The good news is that the list of *non-technical* skills in demand for ICT matches those in demand for Manufacturing and Financial Services as well, and solutions for increasing availability of these "soft" skills can be developed for all three sectors in the same exercise.

One skills-related problem observed was that employers could be unrealistic in their expectations in looking for both types of skills.

York Region's ICT industry is growing well, and has strong opportunities. Many high-profile firms are located there, and many residents are highly educated, and have "STEM" backgrounds.

Our consultations with the Region's ICT employers revealed that they are seeing many of the same trends, and are experiencing many of the same shortages and skill gaps, as revealed by the literature review. They see and feel the impact of advancing technologies both within and outside their firms. They struggle to recruit several technical occupations as well as salespeople with good technical acumen, and the ability to sell complex solutions to executives.

2.3 Manufacturing

Despite years of decline in Manufacturing, growth in the sector has been restored, albeit at modest rates. As with ICT there are excellent growth avenues and opportunities in the industry, but there is a lot of lost time to make up, and a lot of investment to undertake. Our manufacturing productivity is low compared to our global competitors and needs to be accelerated. Becoming or remaining competitive in Canada and locally will require all manufacturers to adopt "advanced" methods, processes, and technologies. It will also require that firms throughout the sector engage in *upskilling* of their employees.

There are 50,817 manufacturing firms in Canada, 20,182 in Ontario, and 2,627 in York Region as of December 2016. "Fabricated metal product manufacturing" has the largest number of firms at each geographic level. Unlike the case in ICT, the largest fraction of each of these totals are firms employing 5 to 49 employees, (with 1 to 4 employees being second). Total Canadian employment in the sector is 1.7 million, 800,000 of which are employed in Ontario, where Auto Parts and Aerospace are "experiencing a rebirth", and Food Manufacturing is strong as well. As at the end of 2016, manufacturing accounted for 15% of total employment, 79,600 jobs in York Region.

Current and emerging technologies well suited to manufacturing are a specialized subset of those that characterize the ICT sector, and include industrial automation, robotics, nano-technologies, artificial intelligence and additive manufacturing, among others. "Fixing" manufacturing will require a lot of investment in R&D, innovation, new product development and global marketing. Government support and encouragement will be imperative.

Heavily engaged in the "Digital Economy", manufacturing must also invest in the *human talent* to be able to apply, operate and maintain advanced equipment. In fact, Manufacturing's *biggest problem* is its current and growing labour shortages, in both traditional and newer "technical" functions.

Firms are challenged to re-hire those they laid off in the past, because they don't often have the skills now needed in advanced operations. Manufacturing has a particularly larger "older" cohort, and will see many retirements in the coming decade. At the same time, the industry is not attracting highly skilled young people for long-term careers.

The jobs and the technical skills in high demand in manufacturing are somewhat different from those in ICT. Those jobs and technical skills include traditional roles and trades, as well as more modern engineering and IT-related areas. They are very different, for the most part, from those associated with the simple, repetitive functions of the past. Today the industry is looking for more technical-trained, more capable "knowledge" workers to apply, operate and maintain the "digitally controlled" production equipment now in use. Workers need to be problem solvers, analysts, trouble-shooters and programmers, and be flexible, effective communicators and team players. Mostly gone are the days of classical craftsmen and pure manual labour. Section 5, of the expanded report, provides the lists of manufacturing jobs and technical skills currently in demand.

But manufacturers also need their employees to possess strong non-technical skills, and our findings are that the list of such skills for manufacturing matched that for the ICT industry very closely, as already mentioned. Again, the employability "soft" skills list may be found in Section 6 of the full report.

York Region's manufacturing industry is growing slowly, and has strong opportunities. It is the Region's largest employer, and it continues to require the Region's support. The expanded report contains an in-depth examination of the Region's manufacturing *recruiting* environment. It provides historical numbers of job postings in various *traditional* manufacturing occupations, with skills requested both technical and soft.

Our discussions directly with York Region manufacturers revealed that they are certainly feeling the impact of advancing technologies, and finding difficulty in recruiting a variety of positions, including entry level people such as labourers and assemblers, CNC machine operators, plant managers, skilled trades, technical salespeople, and both hardware and software engineers.

2.4 Financial Services

Financial Services is a multi-subsector industry that includes Banking, Insurance, Investment and Wealth Management, Accounting and Bookkeeping, and "FinTechs". The industry is alive and thriving in the GTA, and represents a great "opportunity" sector for York Region, as do ICT and Manufacturing. Performance and growth in Financial Services is strong, but things are changing rapidly. Just as advancing technology is transforming ICT and Manufacturing, it is to some extent actually disrupting the traditional Financial Services markets. There are rapid changes in the way financial institutions are serving their customers, with a substantial migration to online services, mobile apps, and modern interfaces for Enterprise Resource Planning (ERP) systems. Internally, new technologies are driving improvements in productivity and profitability, and "Big Data" and "Analytics" are becoming more powerful tools. Those players not investing, innovating and "digitally adopting" will be left far behind by those embracing and driving new applications.

Fintechs are often small or start-up ICT firms focusing on delivering new financial services in new ways to clients. As such they are the disruptors. However, most traditional financial institutions are becoming Fintechs themselves through partnerships, acquisitions or direct investment in technology application and "product" development.

There are 60,571 Financial Services firms in Canada as of December 2016, with 23,222 located in Ontario, and 2,921 in York Region. Firms employing 1 to 4 people form the largest number of these totals, followed by those employing 5 to 49, but of course the largest institutions employ extremely large numbers of workers. Canadian employment in finance and insurance at the end of 2016 was 808,000, for Ontario it was 409,000, and in York Region it was 27,000. If we add in Accounting, Bookkeeping and Tax Services, those numbers would likely almost double for the whole sector.

Canadian banks are doing well, despite carrying lots of large mortgages at low interest rates. They are attractive places for young MBA graduates to start a long and stable career. But advancing technologies and market entry of "FinTechs" are driving banks to invest in technology.

Investment firms also face the technology challenge, and are seeking new ways to serve millennials who stand to inherit very large amounts of money. They fear a scarcity of financial advisors as older employees retire. Insurance firms are a little slower to pick up the technology ball, but recognize that they will get left behind if they don't. Not as popular as banks as a career destination, they need to promote themselves.

Most accounting firms are typically much smaller, and while they apply technology to improve both customer service and productivity, it is not as pre-occupying. However, they face difficulties in finding some kinds of employees, especially in York Region.

FinTechs themselves are the fastest growth sub-sector in the industry, and typically join larger, more established firms to reach more market and finance their growth.

Financial Services jobs in large institutions are evolving and new ones are emerging in IT roles, especially in Cyber Security, Big Data Analytics, Artificial Intelligence, Mobile Systems and Legacy Systems interfacing. Traditional financial functions are being automated, and new positions of opportunity lie in multi-skilled roles that integrate finance, technology and business.

Jobs and skills in the industry now involve new and different skill sets to support technological evolution of business models, and in a number of cases, the skills financial institutions now seek are unavailable in their traditional labour pools and recruitment categories. As a result, there are certainly skill gaps. The jury is still out as to whether there is or will be an actual labour shortage in the industry. Some studies claim Toronto has a labour surplus in terms of traditional financial roles. Other studies claim CFO's are complaining about being short-staffed and struggling to find the right people. Feedback we have received from employers and recruiters is mixed. Large financial institutions with whom we spoke didn't seem to be having significant recruiting problems, but recruiters and smaller firms reported a very tight market for both traditional and "digitally enhanced traditional" financial workers.

The specific jobs and technical skills in demand for Financial services are indicated in the full report. They are quite different from those for the other two industries. However, the "soft" skills in demand closely match the list for ICT and Manufacturing.

The feedback obtained speaking directly to Employers reflects a substantial difference between the employment needs and challenges of large institutions and smaller, local operations. The large institutions don't currently face labour shortages, and are typically popular career destinations for business students. They are also making larger investments in technologies, and as such are beginning to seek recruits with STEM educations in their backgrounds.

Smaller, mostly accounting firms, are less technology absorbed, and report a very "tight market" of the more traditional roles they seek, such as accounting managers, payroll specialists, auditors, and A/R – A/P specialists.

2.5 Employer Feedback and Issues Common to All Three Target Sectors

2.5.1 "Essential Soft Skills"

In our various engagement events with employers from all three target industry sectors, we found that they all reported requirements for "Essential Soft Skills" with the same or very similar lists of skill types. We therefore combined the three-sector essential soft skill lists into one, which can be found in Section 6 of the full report.

There was also general consensus that employers "shouldn't" have to teach new hires fundamental life skills, and that new young entrants into the workforce typically lacked a lot in the essential skills area.

2.5.2 Labour Market Information, Employee Training and Government Support

Employers we consulted about their access to good Labour Market Information (LMI), mostly told us that what they have and what they can access is entirely adequate for their recruiting purposes. However, it seems that we have heard smaller employers without dedicated H.R. departments tell us that they really need to have access to LMI, especially to understand going wage rates and where to access good labour pools for the various positions they hire.

In terms of employee training, we ran into a big disconnect from what the literature review tells us. As opposed to limiting their investments in employee training, employers told us they "do a ton of it". From new hire orientation to on-the-job training and specialized courses for upskilling and management development, they are firm believers and investors.

In terms of government support, employers feel that the Canada Ontario Job Grant program was already overly restrictive, and now is becoming more so. They also strongly feel some government or agency should streamline and cost-reduce local transportation into, out of and within York Region. Finally, skilled immigrants are felt to be a very important source of talent that is hard or impossible to hire locally. Employers would really like to have access to information about the skilled immigrants already here and those on the way, if possible.

2.5.3 York Region Location Issues

York Region is a great place to live and work, and has a large educated population of high-skilled workers. It can access an extremely large labour pool, and is preferred by many families to the noise, smog and safety issues connected with downtown living. Nevertheless, York Region has to compete hard with Toronto firms for high-skilled talent. The pay is better downtown, as are the cultural and sports amenities and the nightlife. The big head offices are there, and a very high concentration of jobs per square mile. In light of these factors, strategies need to be developed to make the Region more competitive.

2.6 Under-represented and Challenged Labour Market Groups

2.6.1 Youth

Youth are the future. No one else will take over the operation of our societies and our economies. Yet they face some serious challenges in getting their start in life and in the Labour Market. For a long time, people under 25 in the workforce have experienced unemployment levels approximately twice the rate of that of the rest of the workforce. The "teen" portion of the 15 to 24, (or 29) cohort are far more unemployed than those in their early 20's. Ontario appears to be worse off in terms of teen unemployment than most other promises. Youth are far more likely to have "precarious" part time work than their elders. Their "real" hourly wages over have actually dropped since the early 1980's.

There are some issues and arguments related to the meaningfulness of the unemployment statistics, but our research has revealed that Youth *are really struggling* to find meaningful work, especially those still in their teens.

There are, of course, different kinds of young people, with varying backgrounds, education levels, living standards and advantages or disadvantages. Some didn't finish high school before entering the workforce, and are really hard-pressed to find steady work, even at "entry levels". Others have finished high school, and have decided not to pursue post-secondary education. They are better off but still face limited opportunity and career choices. Then there are graduates of colleges and universities. Those that chose professions or programs aligned with high demand, well-paying jobs, are generally finding work, (although it is not an "automatic" outcome by any means).

Those that didn't base their choice of education stream on labour market needs, and pursued general B.A. programs and the like, have faced challenges in transitioning into the labour market without a career related skill set. To make matters worse they typically graduate carrying massive debt-loads. Many stay with, or move back in with their parents until they can support themselves independently.

However, there are a few common challenges youth in almost any circumstances face in finding work. Some are:

- Lack of work experience is a major barrier at all levels and in all markets, (save perhaps for a few minimum-wage, low-skilled entry level roles). This well-known "Catch 22" position for new job seekers has existed forever, but remains unsolved. Co-ops and internships as part of one's education can help, but those opportunities are not as heavily engaged as they could be. Summer jobs also help, but are hard to get in any but the most basic roles.
- Over-control or under-involvement on the part of parents often results in career decisions being made for the wrong reasons, or never being made at all.
- Lack of labour market research and career planning in advance of making career decisions in high school, leads many to make uninformed, unfortunate decisions. Young graduates typically have no training in job search skills, and don't know where to begin.
- Being young, one hasn't had the opportunity to develop many of the qualities and soft skills that employers expect, but that can only be acquired over years in and outside of working life. Employers can be reluctant to allow for this very real and natural circumstance, and instead look beyond it into the potential, the enthusiasm and the energy a new young employee can bring.

There is a long list of important skills that employers complain young job seekers typically lack, in Section 6 of the full report. The challenge is that many of those skills are only acquired through long work experience, so employers should not be surprised young people do not yet have them.

The rest are serious gaps that need addressing somehow, through training at home, in the education system, or via outside agencies.

We solicited feedback from young people in the job market through an online survey, and received over 120 responses. Most respondents had high school education only, but 22% had college or university degrees. 63.4% of respondents to our question about employment status indicated they are unemployed. Those that are employed have a wide variety of primarily entry level jobs in customer service, retail sales and several other areas. Many of the respondents are enrolled in IT training, and have ambitions in the sector. This is great news, and more needs to be encouraged.

Respondents reported having some solid employability skills already under their belts. But they reported needing more in order to get the jobs they seek, primarily in the technical, professional and specialized industry knowledge areas. Far and away the most frequently mentioned barrier to landing a job was lack of experience. Respondents provided a long list of things that would further help them, most were in the area of more job search support, more network connections, references and counselling. *One suggested that job search skills should be taught in high school.*

Feedback from young people reflected positive attitudes, serious job seeking efforts, and good coaching and support from employment service providers and other agencies. The challenges they report include their need for more education, (especially technical), their need to develop self-confidence and solid communications skills, their needs for market contacts and networking support, and their need to be able to build great résumés, and get them into the hands of the right decision makers. Many of them depend on the service provider coaching they get, and they want it to last longer and go farther. Skill gaps are highly dependent on the career goals of the young person, but computer and technical skills as well as a litany of soft skills, seem to be the opportunity areas.

2.6.2 Displaced Workers

Displaced workers are those who have been permanently separated from long time employment with a single employer, or in a single industry. Their skills and experience are strongly related to the job and the industry from which they have been displaced. Displacement of men affects 8% to 9% of the workforce each year, the range is 4% to 5% for women. Only 80% of displaced men and women are re-employed within the first year.

But displaced workers are a conundrum. The news is not good when it comes to how they fare after they become “displaced”. Lifetime earnings drop considerably; it takes a long time for many of them to become re-employed. When they do, it is usually in a lesser position, with lower responsibility, lower compensation, and lower self-esteem. Displaced persons in their forties and fifties, with (often adult), children living at home and elderly parents to look after, find themselves in unbearable “no-win” situations, and family dissolution can result.

For older workers, the re-employment rate drops, and economic loss increases substantially when they are displaced. Older displaced workers have fewer transferable skills, and decreased use of mathematical, cognitive and relationship skills when they are re-employed.

Many elect to take early retirement, whether or not they can afford it. Some simply become burdens on their families. Others find their way into social welfare systems and burden society.

Consequences of extended unemployment include a 15-20% increase in death rates, a drop in the likelihood that teen-aged children of displaced workers will attend college or university, and consequently children of a displaced parent will have 9% lower earnings.

The reality is that we need displaced workers to rejoin the workforce, and to contribute to the economy. There is already a very large (Baby Boomer) cohort due to retire over the next decade or two, thus ending their economic contributions. We must do anything we can to avoid exacerbating the situation, and we must help displaced workers find new hope and self-esteem by rejoining the labour force.

Displaced workers bring loads of experience, intelligence, judgement, wisdom and loyalty to a labour market whose young entrants bring plenty of other good things, but few of those. There is a definite "Skills Gap" that obstructs displaced workers from moving on. The missing skills are those related to today's expanding industries, and tend to be "digital", technical, and analytical, which rely on strong literacy and numeracy attributes.

Policy Issues and Possibilities

Retraining programs for displaced workers to move them into an expanding industry have questionable effectiveness. While Ontario's Second Career Program was well subscribed and produced reasonable results in its early years, and according to Employment Service Providers with whom we spoke recently, the program has its challenges, and results are mixed:

- Older workers seem to have a hard time learning new disciplines and skills, especially in the digital and technical areas. They often can only learn through outdated methods that require their instructors to change their teaching methodology.
- Older workers are often justifiably very proud of the industry from which they have come, job they did, the expertise they had, and the money they made. They frequently resist diving whole-heartedly into starting all over again as a neophyte in a new field at much lower pay.
- There is no guarantee they will qualify for the Second Career program, and even if they do, and they manage to make it all the way through, the program does not equip them with the job search skills they will certainly need in the "new" industry sector.
- Employers, whether they will admit it or not, are reluctant to hire older workers into positions with any long-term potential, regardless of experience and fresh skills. What makes it tougher is that older workers know this, and defeat themselves mentally even before they go to an interview.

A targeted federal initiative for older workers showed initially great results in terms of re-employment, but follow success measurements dropped significantly.

The literature puts forth a number of recommendations for policy changes to improve the plight of displaced workers. They include;

- Improve our knowledge of the current situation,
- Encourage early retirement with a subsidy for wage maintenance until retirement age,
- Enhance both passive and active Employment Insurance programs,
- Explore 2-year college re-training, which has worked well in the U.S.
- Support re-location of displaced workers to markets with better opportunity.

2.6.3 Internationally Educated Workers

It is pretty clear that Canada will be depending heavily upon IEP's to fill a large portion of the serious gaps between current and future demand for highly skilled labour, and domestically available supply. The advice we are getting is to increase immigration over the next few years to an annual influx of 450,000 people. Recently the federal government announced it would bring in *a million immigrants in the next three years*. That will be short of the recommended mark, and likely will allocate lower-than- recommended spots to economic (skilled worker) immigrants. Canada has an enviable reputation globally as having a "model' immigration system, finely tuned over many years, and designed to drive economic growth and improved life style. However global competition is heating up, and the country cannot afford to rest on its laurels.

Meanwhile the government has been trying hard to facilitate the immigration of skilled workers through new initiatives, such as changes to "Express Entry", and the new "Global Talent Stream". These measures are appreciated by the business community, and will accelerate processing of Temporary Foreign Worker work permit applications.

Both employers and newcomers face challenges when it comes to making "a job connection":

Employers

- Some employers can be reluctant to hire immigrants because fear of language issues, unverifiable qualifications, and difficulty in integrating and managing them. Mythical stereotypes about immigrant attitudes as well as unconscious bias also come into play.
- Employers who have hired immigrants have found them to have excellent attitudes and work ethics, but have struggled with government processes in trying to hire workers from outside the country. There are language and cultural difference challenges, but many employers have found work-arounds.

Newcomers

- The largest problems IEP's appear to face in coming to Canada are major difficulties in getting Canadian accreditation in their professions, and overcoming employer demands for Canadian experience. Inability to overcome these barriers has resulted in large numbers of in jobs for which they are over-qualified and under-utilized.

- They often face language barriers as well, immigration requirements notwithstanding. They find learning English difficult and flock to communities both where they live and at work, where they can speak their native tongues.
- They are increasingly preparing for emigration before they come over, by researching online, but they still find many unexpected challenges when they arrive.
- They believe the government welcoming and support services could be improved a lot, and they ask for access to a lot more labour market information than they can find.

Our direct feedback from seventy-nine IEP's to our consultations and survey confirms a lot of what we learned from consulting literature on the subject of Skilled Immigrants. Respondents to our survey are incredibly well educated, but can't find work here that applies and rewards their expertise. Accreditation is a major barrier. The "Canadian Experience" thing hasn't gone away, despite legislation. Discrimination, nepotism and not "having the right connections" as reported may partially be related to frustration and bitterness, but such feedback is unlikely to be baseless.

The feedback we got from the Employment Service Providers with whom we spoke informed us that immigrants are nowadays doing better research in their home countries and are arriving here better prepared than they used to be. Major improvements are within reach for addressing challenges employers face bringing skilled immigrants to Canada as new permanent employees, and challenges IEP's face after arriving in getting accreditation and landing that target job.

2.6.4 Feedback from Community Services Providers.

We convened a meeting of York Region Employment Service Providers and representatives of other community agencies, to learn about their experiences in working with Youth, Displaced Workers, and Internationally Educated Professionals. What they told us for the most part aligned with what we had heard from Youth and IEP's, and what we found in the literature. The local labour market has tightened, fewer people are looking for work and more are finding work. Even entry-level workers are hard to find right now.

The three groups of challenged job seekers we asked about are definitely recognized by these agencies, and they do offer targeted programs for them. Youth Job Link, Youth Job Connection, Youth Reach and NPower were mentioned, as well as "Second Career" for displaced workers, and a number of Immigrant Welcome Centres and support programs. One training institute offers a wide variety of Certification programs for workers wanting to upgrade and make current their qualifications.

These groups definitely bring valuable skills to the labour market. Youth bring amazing digital and computer skills, displaced workers bring wisdom, experience, judgement and maturity. Skilled immigrants bring advanced educations, professional experience and excellent attitudes with them.

Skill gaps and other barriers these groups face include;

For young people, lack of essential soft skills, insufficient education, lack of work experience, lack of job search support, lack of job search skills, parental interference or lack of parental guidance, and for first generation newcomers, the challenges of dealing with Canadian values and culture outside the home, and "home country" values in culture in the home.

For displaced workers, lack of modern technical skills and "digital" acumen, some lack of soft skills, difficulty learning, their own attitudes; arrogance, pride, inflexibility, reluctance to learn and re-invent themselves, lack of labour market information and lack of job search skill.

For IEP's, lack of Canadian accreditation, employer demands for "Canadian Experience", lack of English language skills, other "essential soft skills", and cultural differences in the workplace.

A wide variety of training and support programs are offered to address individual needs. These include Essential Skills, Computer Skills, the Youth programs already mentioned, the Certification courses already mentioned, a program called "Networks" that offers Youth and Immigrants opportunities to make business connections and network with C-level executives, and many more. The Canada Ontario Job Grant has been well subscribed, and used mostly to train existing employees. Popular areas of study include Lean Six Sigma, ERP systems, Truck Driving, Sales, Leadership, IT courses and vendor-specific training.

Recommended improvements to current programs included making them more inclusive and more long term, allowing more local decision-making and continuation of client support well into the post-hiring, employed phase.

2.7 Recommendations at the Local Level

2.7.1 Addressing the "Essential Soft Skills" Gaps in all the Target Sectors

As a next step, more extensive research is needed into all the essential soft skills programs that are already available in or close to York Region. The subject matter taught, class sizes, program capacities, costs and delivery locations need to be understood, along with the experiences and future plans of providers of these programs and the availability and the feasibility of online "self-help" course material.

With such information in hand, *the following step* would be to explore a way of unifying, promoting and growing the delivery of "Essential Soft Skills" learning throughout the Region. Educators, service providers and employers need to be involved in order to develop jointly supported objectives for aggressively growing the learning activity taking place throughout the Region. With a clear Terms of Reference and Goals in place, strategies and action plans for promotion, expansion, quality assurance, certifications and results tracking could be worked.

2.7.2 Transitioning Internationally Educated Professionals into the Labour Market

As a next step in supporting IEP's, undertake a three-stage approach to improving the lots of immigrants here trying to find meaningful work, and employers trying to find scarce talent:

a. Utilizing 2016 immigrant census data, further investigation into the local population, the profiles, the employment status and the job search experiences of Skilled Immigrants in York Region.
b. Partner and confer with local agencies that support skilled immigrants with employment services, accreditation and bridging programming.
c. Develop activities that promote collaboration between local employer employers and skilled immigrant talent resource.

2.7.3 Transitioning Youth to the Labour Market

Working with the school boards, colleges and Employment Ontario to develop a local resource that supports the transitioning to post-secondary education and the labour market.

- help families learn about the importance of education and career planning,
- inform students and families about current labour market trends,
- identify desired attributes that employers require in new candidates
- promote resources to assist with job searching and networking

2.7.4 Addressing Potential Labour Shortages

Many graduates and workers living in the Region often look to downtown Toronto for work. Local employers often first look "downtown" for recruits. To reduce the daily outflow of resident professionals commuting to Toronto, and actually increase the daily inflow of Toronto talent, the following are proposed:

- In partnership with the Region of York, develop a promotion and communication plan to better inform York Region residents / local employers about all of the industries, employment opportunities and talent right here in the local labour market; this will encourage skilled job-seekers to check out employment opportunities in York Region first.
- Highlight ICT, Manufacturing and Financial Services sectors as high growth sectors within the region to address the live/work ratio in York Region and reduce the daily outflow of the skilled workforce commuting to Toronto.

In Section 9 of the full report, more details related to these recommendations for local initiatives are laid out. Possible additional local undertakings in the areas of i) addressing the technical skill gaps in each target industry sector, and ii) addressing the challenges Displaced Workers face in getting back to work, are presented as well.

2.8 Proposals for Government Policy Makers

Skill Gaps, Labour Shortages and Under-Represented Job Seeker Challenges to Address

There are many possible avenues for government policy makers to tackle the challenges currently being faced in our target sectors and by under-represented worker groups. Our recommendations have been divided into six areas to address;

1. the "essential soft skill" gaps that characterize all sectors,
2. the opportunities that exist to facilitate and accelerate IEP's coming into the country and finding meaningful work for which they have been educated,
3. the barriers Youth face in becoming full workforce participants,
4. the potential labour shortages that threaten all sectors,
5. the technical skill gaps in each target industry sector,
6. the challenges Displaced Workers face in getting back to work.

The full report

The full report contains up-to-date statistics and a comprehensive review of current literature supporting a more detailed examination of the three sectors and labour pools in York Region.

SECTOR ANALYSIS:

Information and Communications Technologies (ICT)

SECTION 3

Given the major advances in technology taking place around the world, transforming markets, businesses, work processes, jobs, and most of our lives, it is not surprising that demand for technology products and services is growing steadily. "ICT" has been defined in different ways, and, unlike other industry sectors whose definitions are "cut and dried", ICT must be defined in two ways:

1) It is an *industry* that produces everything related to Information and Communications Technologies, in the forms of both products and services, everything "tech" and "high tech". There is no single North American Industry Standard Code for ICT. Rather, Statistics Canada has identified no less than twenty NAICS codes to define the industry, (see the list in Appendix A)
2) ICT also refers to a *group of occupations.* The Information and Communications Technology Council of Canada, (funded by the Government of Canada's Sectoral Initiatives Program), has identified a list of National Occupation Categories, (NOC codes) that relate to ICT, (see the list in Appendix B).

3.1 ICT Industry Sector

Using Statistics Canada's list of ICT NAICS codes, and their "CANSIM" Tables of Business Counts, one can derive a clear picture of the numbers of ICT firms in Canada, in Ontario, and in York Region, from two perspectives. The data is as of December 2016.

Table 3.1 shows the numbers of ICT firms by geographic area, broken down into major component subsectors.

Table 3.1 ICT Firms by Sub-sector	Canada		Ontario		York Region	
	Number	% of Total	Number	% of Total	Number	% of Total
417310 - Computer, computer peripheral and pre-packaged software merchant wholesalers	1,233	2.9%	645	2.9%	156	3.4%
417320 - Electronic components, navigational and communications equipment and supplies merchant	1,308	3.1%	586	2.6%	125	2.8%
511211 - Software publishers (except video game publishers)	1,547	3.7%	748	3.3%	116	2.6%
541514 - Computer systems design and related services (except video game design and development)	31,725	75.9%	17,949	79.9%	3,736	82.6%
811210 - Electronic and precision equipment repair and maintenance	1,834	4.4%	728	3.2%	122	2.7%
All Others	4,175	10.0%	1,813	8.1%	267	5.9%
TOTAL	**41,822**	**100.0%**	**22,469**	**100.0%**	**4,522**	**100.0%**

Out of the 41,882 ICT firms in Canada, 22,469 or 54.1 %, are in Ontario. Of those, 20%, or 4,522 are in York Region. In each of these geographies, by far the largest sub-sector is "Computer Systems Design and Related Services", the next four largest are ICT *wholesalers* in two categories, "Software Publishers, and "Electronic and Precision Equipment Repair and Maintenance". The remaining fifteen (15) sub-sectors make up only 6% to 10% of the total sector. Notable is the consistency of this subsector pattern from Canada right down to York Region.

Table 3.2 shows a different breakdown of the numbers of firms in each geography, this time by employee counts.

Table 3.2 ICT Firms by Employee Count

Employment Range (Employees)	Canada ICT	Ontario ICT	York Region ICT
500 Plus Employees	108	53	7
50 - 499 Employees	1,604	790	107
5 - 49 Employees	9,373	3,908	635
1 - 4 Employees	30,797	17,718	3,773
Total Firms with Employees	41,882	22,469	4,522

In a similar pattern to the sub-sector make-up of the industry, one category is far and away larger than others, and that is the number of small firms with 1 to 4 employees, that make up anywhere from 73.5% to 83.5% of the total sector, depending on the geography. In other words, the industry is primarily one of small "Professional and Technical Services" firms. In York Region, most ICT firms are located in Markham, with significant numbers as well in Vaughan and Richmond Hill.

3.2 ICT Workforce and the "Digital Economy"

IT and communications workers don't work just in ICT firms. In fact, far more of them work in other industries than ICT. The Information and Communications Technology Council has addressed this important distinction by defining the "Digital Economy", as including ICT professionals in ICT firms, ICT professionals in Non-ICT firms, and Non-ICT workers in ICT firms.

ICTC's recent publication *"The Next Talent Wave – Navigating the Digital Shift – Outlook 2021", estimates* the Digital Economy, in terms of annual contribution to national GDP, has grown from $62.4 billion in 2008, to $72.4 billion in 2016. It estimates employment in the "Digital Economy" to total 1,389,000 people, of which 730,000 (53%) are ICT professionals working in Non-ICT industries, 487,000 (35%) are ICT professionals working in ICT firms, and 168,000 (12%) are Non-ICT professionals working in ICT companies. Employment in the "Digital Economy" grew at a 2.38% annual rate from 2009 through 2016, outpacing the total economy significantly. Within the ICT industry sector only, employment grew from 638,000 in 2014 to 655,000 in 2016.

In 2016, distribution of ICT workers in the Canadian Digital Economy included 157,000 in Manufacturing, and 74,700 in Finance and Insurance, our other industry sectors under study.

560,000 (47%) of Canada's ICT workers are employed in Ontario.

In 2016, Immigrants make up 394,000 of Canada's ICT professionals, a total which has grown 6.7% annually since 2009. This far outstrips addition of Canadian-born talent to the ICT workforce.

In terms of York Region, "Yorklink", York Region's Economic Development website, estimates the current number of ICT professionals living in the Region is ~ 65,000. 2011 Statistics Canada data puts employment in the ICT sector in York Region to be 41,585. Allowing for 3% annual employment growth in the sector, ICT employment in York Region today is approximately 50,000.

3.3 Going Forward

ICTC's *"The Next Talent Wave – Navigating the Digital Shift – Outlook 2021* anticipates continued rapid growth in employment of ICT professionals through 2021, at annual rate of 3.6%. Between now and then, 216,000 ***new*** jobs will need to be filled, 88,000 of those in Ontario. The biggest challenge for ICT and for the Digital Economy as a whole will be to find qualified people to fill those new jobs.

3.3.1 Demand Drivers for ICT Firms and for ICT Professionals

People and businesses around the world are now totally interconnected, as are markets, customers and industries. Technology ***application*** to reach and serve customers better, to reduce costs, to increase productivity and to compete more effectively, is accelerating. Technology ***evolution*** through research and innovation seems to be moving even faster. There is as much "finding of applications for new technologies" as there is "finding technologies for new applications."

As such, demand in the ICT sector is accelerating as well, ICT firms are growing to meet increasing demand for hardware, software and systems. At the same time, non-ICT firms are applying new technologies both hard and soft, to stay competitive and survive. As a result, demand for ICT professionals is high and growing. The current and emerging technologies that underlie what is happening would require a lengthy in-depth discussion so they are only listed here for information purposes.

3.3.2 Current and Emerging Technologies:

According to ICTC's *"Digital Talent – Road to 2020 and Beyond – A National Strategy to Develop Canada's Talent in a Global Digital Economy"*, currently important technologies include;

- "SMAAC" – Social Media, Mobile, Applications, Analytics and Cloud,
- "IoT" – The Internet of Things,

- Industrial Automation and Robotics, and
- Additive Manufacturing, (including 3D Printing).

Migration of IT services from in-house to the "Cloud" is lowering IT costs. "Big Data Analytics" are providing large amounts of historical and predictive information to businesses that enables them to anticipate market changes and optimize designs and processes. "I o T" interconnection of devices, machinery, industrial processes and business systems, is making operations more flexible, more agile and more reliable, while improving quality and driving down costs. Robots (through Artificial Intelligence) are making more and more decisions and taking corrective actions in fully autonomous modern production lines. 3D Printing is revolutionizing how products are proto-typed and manufactured, ushering in the "4th Industrial Revolution.

Emerging Sectors and Technologies

The technology sectors more recent, but growing in importance. They will drive demand for ICT folks with new skills and certifications.

- Cyber Security
- Intelligent Retail,
- Entertainment and Video Gaming
- Connected transportation and smart cities
- Financial Technology, ("Fintech, InsureTech and RegTech")
- CleanTech
- Biotechnology
- eHealth

ICTC's recent update, "*The Next Talent Wave – Navigating the Digital Shift – Outlook 2021",* identifies the following as "Key Transformational Technologies":

- Virtual Augmented Reality
- 5G Mobile,
- 3D Printing,
- Blockchain, and
- Artificial Intelligence,

3.3.3 Labour Market Trends and Challenges

It is expected that 216,000 new ICT jobs will need to be filled in Canada by 2021. 164,000 of the current workforce are 55 or older, (many of whom will retire in the next 5 years). Only 52,400 of the current workforce are in the 15-to-24-year-old age group. The growth rate of the older cohort in the ICTC workforce is much higher than that of the young group. (ICTC "*The Next Talent Wave – Navigating the Digital Shift – Outlook 2021"*).

The prospect of a serious growth-limiting ICT labour shortage is becoming increasingly real, and is already being felt by employers, who report that recruiting IT folk for both ICT and non-ICT roles is becoming increasingly difficult.

There are indeed some dissenters who claim that a large part of the perceived "shortage" relates to unrealistic expectations in the qualifications and experience employers look for in their job postings, and related to that, a lot of very experienced IT professionals who cannot get work because they cannot claim to have all the latest and greatest skills and certifications sought, when they apply for work. But these "challenges" to shortage claims do not deny that recruiting IT people is increasingly difficult, salaries are going up, and a "sellers'" market has evolved.

The knowledge and skills colleges and universities are teaching today's students are beginning to better align with ICT labour market needs, but the rate of change in technology, and the limited labour market data made available to educators and curriculum designers make "keeping" up very difficult. "STEM" program enrollments in Colleges and Universities have begun to rise, but we are still graduating, (at least at the secondary education level), students with very low written and verbal communications skills, low numeracy skills, and little knowledge or understanding of what path they should take to acquire an education the labour market will value.

Participation rates in the ICT workforce continue to be low for women, for youth, for "displaced workers", for aboriginal people, and for people living with disabilities. Despite a short supply of ICT workers domestically, recruiting Internationally Trained Professionals from outside the country continues to be challenging in terms of bringing in highly skilled permanent residents, given the immigration rules and lengthy processes to prove a lack of qualified people in the domestic market.

Even if there ***were*** enough students graduating with the right skills, and there ***were*** unrestricted access to foreign high-skilled workers, and under-represented and marginal job-seeker groups ***were*** optimally engaged, there would still be a problem in Canada's increasing its productivity, its competitiveness and its growth. That is because businesses not only need ICT workers to acquire and implement technology solutions, they need ***almost all*** their other workers to become more "digitally savvy" than they are today, in order for all the new technology, automation and innovation to be applied effectively in all the internal and external processes of the firm.

As such, "Digital Adoption" throughout each firm is a critical requirement in order to take advantage of the trends and opportunities that present themselves. This implies that employers, along with educational institutions and government support programs, must engage "digital training and upskilling" for the larger student and employee populations. There are multiple avenues and vehicles for doing this, in schools, colleges, universities, and in the workplace. Digital adoption doesn't mean everyone must become a software engineer. There are many free online training resources from introductory PC and Office skills, to product and software-specific user guides and manuals, to "MOOC's, (massive Open Online Courses) that provide more advanced learning and certifications.

3.4 Jobs and Skills in Demand for ICT Workers

One of the goals of this undertaking for the ICT sector, is to identify skill gaps, skill misalignments, and other challenges that employers and job-seekers alike face in making meaningful employment happen in Canada, and more particularly in York Region. Research has uncovered the fact that gaps and misalignment are best identified by taking a look at the skills and capabilities employers are seeking in the ICT labour market, and gauging the degree of "gap" by examining the degree of difficulty employers have in finding those skills.

Just about ***every*** reference and publication we consulted on the ICT labour market, emphasizes strongly the fact that formal or technical skills are only ***part*** of their needs when recruiting ICT workers. Universally it is reported that "essential skills", soft skills" and "business acumen" are ***critical*** attributes in the professionals they seek, and are very often missing even in ostensibly well-educated applicants. The analysis that follows deals with skills in two parts – "hard" or technical skills, and "foundational" or soft skills.

3.4.1 "Hot ICT Jobs" in today's labour market

Six different recent publications addressing current ICT labour market demands were consulted with regard to the titles of positions in most demand. There was some variation in terminology, and there may well be variations from firm to firm in position titles and the related qualifications for each.

Nevertheless, the following list has been created through "integration" of what was found in our six references:

ICT Occupations in High Demand

- Information and Computer Systems managers and analysts
- Web developers and Web technicians
- Software engineers, Software developers, Computer programmers
- Database developers, administrators and analysts
- Project Managers
- Graphics designers and Illustrators, and Interactive Media developers
- Security professionals
- Data scientists, Big Data analysts
- Network specialists

Positions most in-demand have changed over the last several years, and likely will continue to evolve as new technologies become mainstream. However, perhaps more important than position names are the skills and certifications required in today's market.

3.4.2 "Hot ICT Hard Skills" in Today's Labour Market

We consulted six ICT sector publications regarding skills in high demand, and synthesized the following list of "hard" or "technical" skills. For technical skills, there are two levels of specificity. The higher level describes the "area" of expertise and experience that describes the skill, per the list following:

Top level "Areas" of Hard / Technical Skills in High Demand

- Data management and data analytics
- Network Security
- Cloud computing content, design, and service management
- Mobile
- Software Development
- Gaming
- Web Development
- Digital & Creative Media
- Project Management
- Platform Administration

The lower, more specific level of currently sought-after skills emerges as follows:

- Java, JavaScript
- C++, C+++, C#
- SQL
- .Net
- Python
- Agile and Scrum
- Unix
- CSS
- HTML, XHHTML
- Linux

To the degree that there are not a lot of job applicants that possess any of these field-related skills or specific software tools, that skill becomes scarce, and chronic situations of missing skills result in the "gaps" referred to earlier. It seems as if an ICT worker would do very well to possess all of the above areas of expertise, and likely few do. The important things is that the "specific" set of hard skills one has supports the field or area being pursued, in order to avoid a misalignment.

3.4.3 Business Skills, Essential Skills and "Soft" Skills in Demand

We consulted five publications concerning the market needs for "Non-technical" capabilities in ICT workers in order to determine the most sought-after soft, "essential" and business skills. While the literature is full of emphasis on the current imperative of bringing "non-technical" as well as technical skills to ICT positions, there is great variation in terminology and definitions. A few publications identify "business skill requirements" separately from "soft" skills, and others combine foundational, essential and soft skills under the "soft" title.

From our five sources, we uncovered the following list of current "non-technical" skill demands:

- Communication Skills, (Verbal, Read, Written, Listening, Presenting)
- Interpersonal skills, (listening, empathy, support, sensitivity, relationships)
- Problem Solving and Analysis
- Drive, motivation (self-starting, positive)
- Teamwork (collaboration, sharing)
- Creativity and innovation
- Planning & Organizing
- Adaptability
- Learning capacity
- Leadership qualities

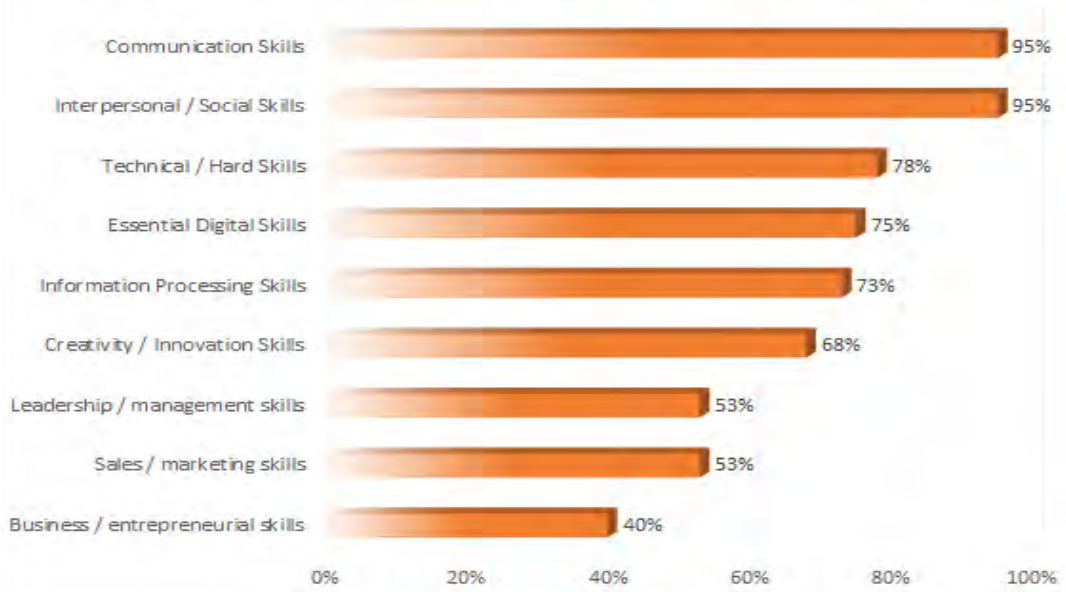
3.4.4 Searching for Super Heroes

It would seem that employers have very high expectations of their ICT recruits, given all of the skills they expect in applicants, and given the rate of change of technology and current information. This phenomenon is underscored in Chart 3.1 which follows, which is reconstructed from ICTC's *"Skills and the Digital Economy – Where Canada Stands and the Way Forward",* by Asliturk, E., Cameron, A., Faisal, S., March 2016:

Employers were asked the question:

"Based on your experience, which of the following skills are "must haves" for employees across all positions in order for your organization to succeed today?"

Chart 3.1 "MUST HAVE" SKILLS RANKING AMONG CANADIAN EMPLOYERS II



Source: ICTC (2016). Unpublished Data. Labour Market Outlook Survey (n=81, sample includes organizations from all sectors of the economy.)

In fact, this report undertakes an extensive development of an almost exhaustive "Skills Framework" for employees in the "Digital Economy". Too extensive to show here, it is reproduced in Appendix 3. Simply looking it over, including all the skills definitions within the five-part structure, one quickly realizes the challenge of transforming the ICT labour force to meet all of employers' wish list demands just isn't realistic.

We should move on to examine the specifics of the York Region labour market, and what York Region employers themselves have told us about recruiting and skills in October of 2017.

3.5 York Region as an ICT "High Tech" Centre

York Region's credentials as an ICT hub are very impressive. The Region is home to some of the highest profile global players in ICT, as well as many smaller specific- industry-focused firms. As an example, the following list from The Regional Municipality of York Economic Strategy team cites some of the firms offering "FinTech" services in the Region:

IBM, Huawei Technologies, XE, Ceridian, G & D Software, SAP Solutions, Real Matters, Doxim, Longview Solutions, 360 Visibility, Causeview Casitron Ltd., Computershare, MRI Investment, Crane Payment, Innovations, Dacom Technical Services, Delta 360, DST Output, EFI, Fileins Systems, Kesm Transaction Solutions, Milano Software, Nexolink Inc., Paymate, Paymentus, Primacy, Q.W. Page Associates Inc., Securter, Smart Solution, STJ Retail, Strategic Information Technology Inc., Banctec, Attra, SelectCore Ltd., CDS Global, and Keal Computer Services.

73% of the Region's 25 to 64-year-olds have post-secondary educations, and 50% of those have "STEM" backgrounds. The Region has about 42,000 resident ICT workers, more than other GTA Regions outside of Toronto, and more than the Waterloo Region.

York Region Recruiting Environment

By applying our own "data analytics" to information accumulated by "CEB Talent Neuron", we can synthesize an overview of actual ICT recruiting activity in York Region. Table 3.3 summarizes numbers of Job Postings over the last four years, by position recruited.

Table 3.3 **- ICT Job Postings - York Region by NOC** **Oct. 2013 - Oct 2017**

Position Name	NOC	4 Year Count
Computer programmers and interactive media developers	2174	3,941
User support technicians	2282	3,722
Web designers and developers	2175	2,971
Information systems analysts and consultants	2171	2,681
Technical sales specialists - wholesale trade	6221	1,719
Computer network technicians	2281	1,696
Computer and information systems managers	213	1,647
Computer engineers (except software engineers and designers)	2147	1,319
Information systems testing technicians	2283	1,094
Graphic designers and illustrators	5241	1,043
Others		5,006
Total		**26,839**

We can compare this list of jobs recruited with lists of "top ICT jobs" reported for Canada or Ontario in other publications, to determine differences in York Region.

Table 3.4 indicates the Employment Type profile.

Table 3.4 - **ICT Job Postings - York Region by Employment Type Oct. 2013 - Oct 2017**

Employment Type	4 Year Counts
Full-Time	26,335
Permanent	23,278
Contract	2,694
Temporary	2,088
Part-Time	997
Internship	670
Co-op	238

It is interesting to note the prevalence of permanent full-time positions for ICT professionals.

Table 3.5 lists the top ICT "hard skills" in demand across the Region over the same time period.

Table 3.5 **ICT Job Postings - York Region Top 20 Skills Oct. 2013 - Oct 2017**

Rank	Skill Name	4 Year Counts
1	Structured query language	3,328
2	Java	3,277
3	JavaScript	3,253
4	Linux	3,160
5	Quality Assurance	2,981
6	Technical support	2,583
7	Hypertext markup language	2,455
8	Microsoft SQL Server	2,345
9	Microsoft .NET Framework	2,161
10	C#	2,083
11	Cascading Style Sheets	2,078
12	Systems Development Life Cycle	1,822
13	UNIX	1,816
14	C/C++	1,807
15	Extensible markup language	1,619
16	Web services	1,602
17	jQuery	1,460
18	Relational Database Management System	1,382
19	Agile Software Development	1,294
20	Adobe Photoshop	1,283

Of course, there are almost always additional demands in postings for "soft skills" as well, as has been identified earlier in this report. Below in Table 3.6 are the Top Ten actual "Soft Skills" that York Region employers are most often seeking in their job postings over the last 4 years.

Table 3.6 **ICT Postings York Region by Soft Skills Oct 19 2013 - Oct 19 2017**

Name	Time-Frame
Oral and written communication	9,123
Problem solving	6,069
Detail oriented	5,076
Troubleshooting	3,974
Microsoft Office	3,606
Project Management	3,351
Creativity	3,347
Software development	3,200
Self-starting / Self-motivated	3,060
Team player	2,564

The frequencies of soft skills being mentioned in postings as indicated in Table 3.6 are much greater than most of the Top Twenty Hard Skills listed in Table 3.5, suggesting that those soft skills are common to many different ICT job types.

Table 3.7 reveals the job locations within York Region related to the ICT postings over the last 4 years. Clearly Markham is the Region's "Hi Tech" centre!

Table 3.7 **ICT Job Postings - York Region Locations Oct. 2013 - Oct 2019**

Name	Census Division	4 Year Counts
Markham, ON	3519036	16,058
Vaughan, ON	3519028	5,712
Richmond Hill, ON	3519038	2,860
Newmarket, ON	3519048	1,211
Aurora, ON	3519046	541
King, ON	3519049	152
Whitchurch-Stouffville, ON	3519044	105
East Gwillimbury, ON	3519054	81
Georgina, ON	3519070	44
Unavailable	0	75
Total		**26,839**

Table 3.8 reflects the various websites and job boards searched in building the Talent Neuron Data Base. Unfortunately, the tool cannot possibly retrieve informal, word-of-mouth recruiting activity, and so it understates total hiring somewhat, but the patterns, positions, skills, employment types and geographic information are very helpful.

Table 3.8 **ICT Job Postings - Sources**
Oct. 2013 - Oct 2019

Posting Location	4 Year Counts
Corporate Site	9,436
LinkedIn	7,830
Workopolis	4,192
Monster	2,875
Kijiji	2,728
JobBank.gc.ca	2,515
CareerBuilder	1,263
Jobillico	975
JobServe	602
ZipRecruiter (US)	556
Others	4,092
Total	**37,064**

On October 19, 2017 there were 849 postings for ICT occupations, (including those from staffing firms), as defined by the ICTC's latest list of NOC codes.

- The average posting period was 37 days.
- The total "Candidate Supply" defined by the total pool of ICT workers in the GTA Labour Market, (employed or not), was 197,000.
- The top titles being recruited were Graphic Designer, Software Developer, Web Developer, Project Manager and Software Engineer.
- The top hard skills required on that day were C/C^{++}, Linux, Java, JavaScript (JS), and Structured Query Language, (SQL).
- The median market salary for all the positions posted was $81,050, versus a national average for the same group of positions of $78,450.

3.6 York Region ICT Employer Feedback

We consulted several different York Region ICT Firms in two different focus group / round table meetings, to find out first-hand about their businesses, trends in their industry, and their experiences in the local labour markets. Two of the firms were large employers, the rest were small and medium in size.

We wanted to understand the key positions for which they are recruiting, the skills required of the successful candidates for those positions, and skills they struggle to find. We sought to learn about their labour market information levels, what they observe in terms of trends and labour shortages. We asked them about the employee training they do, about their experiences with government employment and training supports and what they believe should be added to or improved in those supports

What we learned partially confirms some of what the literature is telling us, but also contradicts other information from secondary sources.

3.6.1 Industry Trends

ICT Employers in general confirmed that they are strongly affected by rapidly advancing technologies both in terms of their customers and in terms of their internal operations. This is not surprising, since technology itself is the field they are in, and what they develop, sell and service. Rapid emergence and evolution of the Cloud, IoT, Big Data, Mobile, and Process Automation are already clearly visible "at ground level" in York Region, and some firms are re-inventing themselves around the new realities. Advancing technology is providing new opportunity to most of those with whom we spoke. There is also a certain degree of stress and anxiety in the sector, as ICT firms and their customers scramble to keep up and get ahead.

Also mentioned by most of those with whom we spoke were concerns over the global geopolitical situation in the United States and European market. Brexit and the possible disappearance NAFTA may dry up export markets. There is already a degree of "decision paralysis" in the U.S.

With regard to the local labour market, consensus was that it has "tightened" considerably. Unemployment in the sector is low. Good people are getting harder and harder to find. People with the right skills can cherry pick the jobs they want. "Millennial" job seekers are particularly relevant to the ICT sector, as companies look to that age group for tech smarts, recent technical educations, and lots of energy.

The ICT workforce, (within and outside the ICT Sector itself), is aging, and the prospects of mass retirements loom for many employers, who dread seeing all that experience and wisdom vanish. However, some observe that older workers are proving harder to train and "upskill" to new methods and digital tools.

3.6.2 Occupations and Skills in Demand

Once again, we obtained a "laundry list" of positions for which employers were or are recruiting, and feedback about which positions are proving hard to find. After review of all the inputs, the following "jobs in demand" were noted;

- Senior Salespeople with strong technical skills as well as solid business development track records,
- Technical "Consultants" to help clients configure and implement ICT solutions,

- Software Engineers, Developers and Programmers,
- Hardware and Electronics Engineers and Assemblers
- Project Managers with PMP designations,
- Entry level Assemblers, Technicians and administrative staff
- Industry sub-sector specialists, (e.g. Building Automation salespeople and technicians)
- Consultants willing to specialize in specific vendor software platforms
- CRM Specialists
- Systems Integration Specialists, (to update / migrate legacy systems)
- Data Scientists and Cloud Specialists
- Web and Mobile O/S Developers
- IT Security Specialists
- Front line Customer Service and Tech Support people
- Mid-level Managers

For most of these positions, recruiting has been challenging. There is typically a gap in the skills that applicants for these jobs have. Often, they don't have the right experience, or the full set of technical skills required. This can be in part attributed to the rapid rate of technology change, and the (consequent) misalignment of what students learn at college or university and what is current in the labour market. In fact, it is likely more helpful to look at skills than at positions, when trying to identify **gaps**.

The reality is that it is likely impossible to identify every technical skill and certification that today's ICT jobseeker should have. It is just as likely that no ICT jobseeker could ever possibly acquire all the technical skills and certifications he or she might possibly be asked for in their job search. All of the employers we asked agreed that no college or university could possibly provide training and certification in every possible programming language, development system or system architecture currently out there. While they can stay up-to-date and inform their students about all the IT branches and emerging technologies, they likely can only teach their students foundational technical skills and knowledge, for students to use as a base from which to pursue specific training.

Experiential learning, i.e. internships and co-ops during post-secondary programs, can expose students to real world IT systems and technology. At the same time, many high-profile ICT firms, (such as Microsoft), make comprehensive, advanced-level training on their platforms available on line, either at reasonable cost or for free. The solution to addressing Technical or Hard Skill gaps that graduates have, lies in finding the right blend of responsibility and effort among educational institutions, employers and the students themselves, to build the optimum portfolio of skills and certifications during the education process.

Our conclusions and recommendations for ICT Sector labour talent and skills issues, are presented in Sections 9 and 10 of this report because, as it turns out, it is very important to consider them in relation to the conclusion and recommendations for other Sections of this report.

SECTOR ANALYSIS:

Manufacturing

SECTION 4

While our mandate is to focus on the "Advanced" Manufacturing sector, the reality is that which firms are, and which firms aren't, included in that group is difficult to determine. "Advanced" manufacturers are those that apply modern methods, modern processes or modern technologies, or any combination of those to their operations to improve efficiency, increase productivity and to remain competitive. Conventional industry statistical measurements of industry participants and occupations still don't differentiate advanced manufacturers from other manufacturers. Nonetheless, the totality of manufacturing in Canada is extremely important to the economy, contributing directly and indirectly 30% of total economic output and 27% of total employment. As such, the analysis will cover manufacturing in total, but will speak to the imperative that all manufacturers must become advanced in order to survive in the long run.

4.1 Industry Profile – Numbers of Firms by Sub-sector

Manufacturing is less complex than ICT to define in terms of NAICS codes, since there is a very specific, comprehensive and contiguous set of codes defined to cover all manufacturing subsectors and firms. The list to a three-digit code level contains twenty-one subsectors, and may be found in Appendix D. Table 4.1, 4.2 and 4.3 summarize the top ten subsectors and total numbers of Manufacturing firms in Canada, Ontario and York Region:

Table 4.1 **Business Counts - Canadian Manufacturing Firms**

NAICS Category	No. Firms
Fabricated metal product manufacturing [332]	7,620
Food manufacturing [311]	5,742
Miscellaneous manufacturing [339]	5,466
Machinery manufacturing [333]	4,737
Furniture and related product manufacturing [337]	3,828
Printing and related support activities [323]	3,683
Wood product manufacturing [321]	3,370
Non-metallic mineral product manufacturing [327]	2,256
Plastics and rubber products manufacturing [326]	2,146
Chemical manufacturing [325]	2,015
All other manufacturing	9,954
Grand Total	50,817

Unlike the ICT sector, the ranking of top subsectors doesn't remain the same as we move from the total market to the local market. At all levels, Fabricated Metal Product Manufacturing has the greatest numbers of firms. Below that the rankings shuffle at each succeedingly smaller market level.

Table 4.2 **Business Counts - Ontario Manufacturing Firms**

NAICS Code	No. Firms
Fabricated metal product manufacturing [332]	3,231
Machinery manufacturing [333]	2,188
Miscellaneous manufacturing [339]	2,097
Food manufacturing [311]	2,017
Printing and related support activities [323]	1,639
Furniture and related product manufacturing [337]	1,436
Plastics and rubber products manufacturing [326]	940
Wood product manufacturing [321]	912
Transportation equipment manufacturing [336]	867
Non-metallic mineral product manufacturing [327]	842
All other manufacturing	4,013
Grand Total	20,182

Table 4.3 **Business Counts - York Region Manufacturing Firms**

NAICS Code	No. Firms
Fabricated metal product manufacturing [332]	349
Miscellaneous manufacturing [339]	286
Printing and related support activities [323]	277
Furniture and related product manufacturing [337]	275
Machinery manufacturing [333]	263
Food manufacturing [311]	247
Non-metallic mineral product manufacturing [327]	132
Plastics and rubber products manufacturing [326]	128
Computer and electronic product manufacturing [334	127
Transportation equipment manufacturing [336]	96
All other manufacturing	447
Grand Total	2,627

4.2 Industry Profile - Numbers of Manufacturing Firms by Employee Counts

Manufacturing firms can also be sub-divided based on the numbers of employees they have.

Table 4.4 **Numbers of Manufacturing Firms by Employee Count**

Employment Range (Employees)	Canada Mfg.	Ontario Mfg	York Region Mfg
500 Plus Employees	287	137	12
50 - 499 Employees	6,666	2,787	325
5 - 49 Employees	26,236	10,271	1,299
1 - 4 Employees	17,628	6,987	991
Total Firms with Employees	50,817	20,182	2,627

In reviewing the ICT sector, the distinction was made between the numbers of ICT firms and the numbers of ICT workers or occupations. This was because the majority of ICT workers are employed in firms other than those in the ICT sector. The same is not true for the manufacturing sector.

4.3 Industry Profile - Employment

According to *"Industrie 2030* "Coordinated national action on skills development essential for economic growth", March 7, 2017,* Manufacturing in Canada directly employs 1.7 million people drives $650 Billion in output, and accounts for two thirds of exports. As we have seen in Table 4.4, there are almost 51,000 manufacturers across the country.

** Industrie 2030 is a joint initiative of the Canadian Manufacturers and Exporters association and the Canadian Manufacturer's Coalition.*

The Canadian Manufacturers and Exporters (CME) association published *"A Manufacturing Plan for Ontario",* and in it cited that;

- there are 20,000 manufacturers in Ontario, (aligns with table 4.2),
- employing 800,000 people,
- contributing 15% of the province's GDP,
- 75% of Ontario's exports, and
- that *for every dollar of manufacturing output, $3.50 of economic activity is generated.*

The 2016 *"Regional Manufacturing Profile for Toronto - York - Durham",* as published by The *Canadian Manufacturers and Exporters ("CME") and the Canadian Skills Training and Employment Coalition ("CSTEC"),* offers the following statistics concerning the area, and some growth projections:

Table 4.5

Population	4,687,946
Employment	2,141,160
Manufacturing Share of Employment	8.6%
Unemployment Rate	7%
Real GDP (2007 Millions)	48,918
Manufacturing Share of GDP	9.8%
Manufacturing Requirements (2016 – 2025)	63,291 employees
Recruitment Gap	36,260 employees

Manufacturing Employment Growth Projections by Sub-sector, Toronto-York- Durham

NAICS	Sub-sectors	2015	2015-2020 Growth	2020-2025 Growth
31-33	Total Manufacturing	181,819	1.2%	-0.4%
311	Food	24,685	0.9%	-0.4%
325	Chemical	13,011	1.1%	-0.3%
326	Plastics and Rubber Products	13,368	1.0%	-0.7%
332	Fabricated Metal Products	15,000	0.7%	-1.1%
336	Transportation Equipment	27,855	0.6%	-0.4%
337	Furniture and Related Products	12,058	0.4%	-0.8%
Other	Manufacturing	75,841	1.7%	-0.1%

According to York Region's *"2016 Employment and Industry Report",* manufacturing is the Region's largest sector, employing 79,600 people, 15% of the total. We have seen (Table 4.4), that there are 2,627 manufacturing firms in the Region.

4.4 Manufacturing Industry Trends

Since the late 1980's, manufacturing has been in decline in Canada. While wages and salaries have risen continually, productivity has grown far more slowly. Manufacturers in most other countries have done much better. A major element of the decline has been the moving of manufacturing operations to lower wage countries such as China, Mexico, India, and Southeast Asia.

According to Manpower's *"The Future of the Manufacturing Workforce" by Thomas Davenport,* Manufacturing in North America lost 5 million jobs between 2000 and 2010, and Canada and Ontario both shared in the losses. When the 2008-2009 Global Recession struck, losses accelerated. Per the *"Regional Manufacturing Profile for Toronto – York – Durham"* referred to above, Toronto-York-Durham manufacturing employment dropped by 27%. Since about 2010, however, employment growth in the sector has become positive again, and is expected to remain at about 1.2% per year through 2020.

Now, in Ontario, Auto Parts and Aerospace are "experiencing a rebirth". Food Manufacturing is strong as well, and continues to grow quickly. The Energy sector has grown too, related to a (tentative) uptick in oil prices. While manufacturing sales are finally picking up, it is expected that over the long haul, *employment will not grow as quickly,* due to the expectation that automation will increasingly eliminate certain jobs, and while new jobs will be created, they will be fewer in number, but wider in scope.

4.4.1 Driving and being driven by advancing technology

Just as is the case for the ICT industry, rapidly evolving technologies are taking the manufacturing industry by storm around the globe. Leading manufacturers have aggressively embraced new technologies of all kinds in order to raise productivity, increase efficiency and better serve customers, (whose desires and expectations are changing just as rapidly). We are entering the "Fourth Industrial Revolution" now, as new approaches and technologies are breaking down the barriers within traditional frameworks. Many of the same current and emerging technologies that we listed for the ICT sector, are also very important in manufacturing. The manufacturing list includes;

- **Industrial Automation,** replacing people in a wide range of repetitive, manual tasks,
- **Robotics,** whose use is expanding quickly in China, Japan, Europe and the U.S,
- **Machine Vision Systems** and advanced sensors and actuators,
- **Artificial Intelligence** and machine learning, making robots and processes more autonomous, self-correcting, and decision-capable
- **Nanotechnologies,** the application of "nanomaterials" in manufacturing, is still "nascent" but developing rapidly, (even in Canada),
- **The Internet of Things,** bringing interconnection of a wide variety of industrial devices, equipment and control systems to each other as well as with ERP system elements upstream and downstream,
- **Additive Manufacturing,** primarily 3D printing, opening up whole new ways of designing, prototyping, testing and making advanced products.
- **Big Data** collection and analytics**,** to monitor, log, analyze and optimize processes from one end of a plant to the other.

At the same time, manufacturers just as is happening in many other industries, are striving to take advantage of all the current and new technologies that can improve marketing, selling, warehousing shipping, customer service, technical support etc.

In other words, Manufacturing is heavily engaged in the "Digital Economy". Because technology is underpinning almost everything, *manufacturers not only need ICT people to help them implement their new systems, they need almost all their other employees to be "digitally" literate and capable of using / operating computer-based systems, both on and off the factory floor. "Digital Adoption" throughout manufacturing firms has become an imperative.*

4.4.2 Innovation in Manufacturing

Unfortunately, in Canada our manufacturers have not invested in machinery and equipment, in new technologies or in innovation nearly to the extent of their global competitors, and as such we are far behind in terms of competitiveness and productivity. At the same time, the geopolitical situation has become frightening. Political unrest in other parts of the globe is driving uncertainty and freezing investment decisions everywhere.

There is hope, however, if we resolve to confront our productivity and technology challenges, to innovate and to invest. There is one more very serious issue developing that manufacturers must overcome if they are to turn things around and succeed.

Despite massive layoffs in the industry over the past few decades, there has now emerged a serious labour shortage problem! The problem is that the kinds of knowledge and skills manufacturers need now, are different from those possessed by the vast majority of employees let go. This is very problematic for both manufacturers and those unemployed.

4.5 Manufacturing Employment in the "Digital Economy"

As mentioned previously, Manufacturing employs 1.7 million in Canada, 800,000 in Ontario, and 79,600 in York Region, as at the end of 2016. Employment growth has returned, be it ever so small, but it could be growing much more quickly if it weren't for scarcity of labour in the industry.

According to *"Industrie 2030* "Coordinated national action on skills development essential for economic growth", March 7, 2017,* (* **Industrie 2030 is a joint initiative of the Canadian Manufacturers and Exporters Association and the Canadian Manufacturer's Coalition.),** based upon recent surveys of a large number of Canadian manufacturers;

- 60% expect labour shortages in the next five years,
- 40% report being unable to find the skills they need today, and
- 20% report foregoing business opportunities today, thus being unable to grow as fast as they might.

Three effects are driving this current and growing labour shortage in this sector:

1. Manufacturing has a higher percentage of aging workers, (age 55+), than other industries, and 22% of the workforce is eligible over the next ten years. Even if they retire more slowly than expected, older workers are harder to "upskill" to current technology. The current "youth" cohort is much smaller, and entry by youth into manufacturing will not offset the retirement-based exit.

2. After years of down-sizing and moving manufacturing out of the country, manufacturing has a poor reputation in terms of being a good long-term employment proposition. The image of factory work being unreliable drudgery is keeping young people far away from the industry in droves.

3. While there are still shortages of labour for traditional manufacturing positions, there is now expanding demand for higher-skilled, better educated factory personnel who have "digital skills" and can operate, maintain and troubleshoot modern computer-controlled equipment, and reconfigure such equipment for different product runs or for improved quality, efficiency and output. There is demand for software engineers, (twice that for mechanical engineers), electronics engineers and programmers.

According to Manpower's *"The Future of the Manufacturing Workforce" by Thomas Davenport",*

"There have historically been two distinct groups in manufacturing environments, often contrasted as "white collar vs. blue collar," "management vs. labor," or "exempt vs. nonexempt." One of these groups, the "white-collar" category, consisted of managers and engineers, typically with four-year university degrees. This group designed and ran the manufacturing plants. The blue-collar group consisted of factory floor workers who operated the machinery and performed any necessary physical work. Most were designated as unskilled labor and had high school degrees, although the blue-collar ranks also sometimes included members of skilled trades such as electricians or plumbers.

Today, however, a third group has emerged in the contemporary manufacturing environment, and is poised to eclipse at least one of the two traditional groups in importance. It is also a category that has grown, even in a manufacturing context, that has seen shrinking numbers of workers. Creating, finding, and retaining workers in this third category are already becoming critical factors in the success of advanced manufacturing. Often called technicians or "techs," it is the job of this category of workers to program, operate, troubleshoot, and maintain the increasing number of computer- and network-driven manufacturing devices in the contemporary factory. These devices include CNC (computer numerical control)-driven routers, stampers, and drill presses, robots, additive manufacturing devices such as 3D printers, and devices in manufacturing cells that communicate through local area networks. These devices have proliferated in manufacturing, not coincidentally at the same time that many traditional blue-collar factory jobs have been outsourced or automated out of existence. Therefore, jobs for techs are rising as overall manufacturing job levels fall.

– 2012 Manpower Manufacturing Workforce Survey"

This triple threat effect is making recruiting for manufacturing very challenging, and introducing skills gaps in new places. There are a variety of jobs and skills that will be in high demand in the coming years, as can be observed in the following:

4.5.1 Manufacturing Jobs in high demand:

CME and CMC *"Building a Strong and Skilled Workforce for Growth",* indicates that there is a *shortage of Skilled* Trades today. 75% of employers anticipate a severe shortage in the next five years. There is likewise a shortage of general labourers, 45% of those employers looking for them can't find them readily at hand.

But in-high-demand manufacturing jobs extend well beyond Skilled Trades and General Labourers. In consulting a long list of references to learn which jobs are in demand and hard to find in the sector, the following unifying list was generated;

Basic

- Production labourers,
- Assemblers
- Machine operators,
- Industrial painters
- Truck Drivers

Skilled Trades

- Machinists and Machining and Tooling Inspectors
- Welders
- Industrial Electricians
- Tool and Dye Makers
- Industrial mechanics / millwrights,
- Hydraulic and pneumatic fitters

Advanced Shop Floor

- CNC Machine Operators and Programmers
- Electronics and PCB assemblers
- Network Technicians
- Team leaders and supervisors.

Advanced Others

- Manufacturing Software Engineers,
- Process Engineers,
- Automated Systems Engineers
- Mechanical Engineers
- Supply Chain Engineers.
- Manufacturing Managers

4.5.2 Manufacturing Employee Skills in High Demand

4.5.2.1 Technical or "Hard" Skills and Capabilities

According to Software Advice.com, in *"Manufacturers are Hiring Again – What Skills are They Looking for?"* by Justin Guinn, the technical skills and capabilities manufacturing workers will need include;

- knowledge of electrical and mechanical processes
- ability to work with computerized systems,
- ability to read and write machine programming code,
- ability to read blueprints,
- ability to operate automated manufacturing systems
- understanding hydraulic, pneumatic and electrical systems

According to Goodwin College*," Which manufacturing skills are employers seeking?",* Jan 17, 2017, manufacturers are looking for the following capabilities;

- CNC machining,
- Quality management,
- Supply Chain and Logistics management
- Manufacturing management (as a specific management qualification)
- Computer applications, and
- Mechanical and technical skills

To these lists, given the advent of technology applications in manufacturing, additional skills required in today's manufacturing jobs include

- Lean manufacturing and cellular manufacturing principles
- Process control and automation
- Plant engineering, electrical and mechanical design
- IT hardware, software, and communications knowledge
- Awareness of IoT, Big Data, and Robotics applications

In addition to the above, STEM skills are required even in non-technical jobs, to handle the automated environment, and to work well with others in it.

4.5.2.2 Essential, Soft and Business Skills

Once again, needed non-technical skills are mentioned very often in the literature, what follows is a unified list:

- Aptitude for technology
- Critical Thinking
- Problem solving, ("A problem clearly stated is half solved")
- Analytical Skills
- Attention to detail
- Strong Communication skills, spoken, written and listening
- Team Playing, ability to work on a diverse team
- Flexibility
- Dependability
- Proactivity - Self-starting, self-managed
- Ability to learn and be cross-trained

The list of jobs in high demand in Manufacturing is long; so long in fact, that it almost appears to be a list of *all* the positions in a manufacturing firm. In fact, however, the list identifies positions very much related to the internal manufacturing operation. It leaves out Marketing, Sales, Administrative, Financial, Human Resources and C-Suite jobs. The list is long because it contains both traditional and relatively new, ("digitally-oriented") jobs.

These jobs are hard to fill because of an inadequate qualified talent pool, and the size of the talent pool is largely limited by the limited interest young people have in the sector, the limited number of STEM educated people in the system, and the mismatch between what educators teach and what the labour market needs. At the same time, there is strong competition from other industries for Skilled Tradespeople, most notably the Construction sector, along with others. This exacerbates the recruiting difficulty.

The lists of skills of technical skills in high demand corresponds clearly with the high demand jobs list, but highlights as well the "digital" and "high tech" skills becoming fundamental to growth and sustainability in the sector.

The list of "Non-technical" skills is not identical to, but is remarkably like the same list for the ICT sector. This is not surprising, but it will become important when we assess the areas of opportunity for closing skill gaps.

Manufacturers, educators and government policy makers have a difficult challenge on their hands, because much like the case in the ICT sector, it seems that recruiters will be seeking "super-heroes" with long lists of skills and abilities in the same person. This expectation to the degree anybody harbours it, is simply unrealistic. We are going to have to break things down and attack the shortages and gaps in manageable steps over time.

4.6 York Region as a Manufacturing Hub

The Region has a lot of "assets" that make it a great place to engage in manufacturing. It is close to major highways and rail facilities. It is adjacent to the country's largest labour pool. The tax environment is friendly, and availability of ICT personnel in local labour markets is higher than almost everywhere else. This is particularly important with regard to manufacturers needing more and more ICT personnel going forward.

From York Region's *"Employment and Industry Report 2016"*

"Consistent with the significant economic downturn at the national, provincial, and municipal levels, the York Region manufacturing sector recorded negative growth at an average annual rate of -0.9 per cent from 2006-2016. Manufacturing remains the Region's largest sector in terms of surveyed employment and accounted for 15 per cent (79,600 jobs) of total surveyed jobs. Transportation equipment manufacturing is York Region's largest manufacturing subsector, accounting for 16 per cent or nearly 13,000 jobs. Since 2011 manufacturing has increased at an average annual rate of 1.7 per cent and 6,400 jobs have been added."

"York Link's" website indicates the following about manufacturing in the Region:

- *"Canada's fifth largest manufacturing cluster with 70,000 local jobs and over 2,700 manufacturers*
- *$14 billion in annual manufacturing exports (est.) from York Region-based manufacturers*
- *Key manufacturing industry verticals in York Region include auto parts, electronic and electrical products, building products, food products, and pharmaceuticals*
- *Home of leading Toronto area manufacturers including Magna International, Mircom Group of Companies, Microart, Martinrea, Jeldwen, RuggedCom-Siemens, Showa, Teva, GE Grid IQ, Apotex, Amico, Gracious Living, and Allan Window Technologies"*

While Manufacturing is the Region's largest employment sector, some employers feel the government of the Region of York appear to be more focused on other sectors at this time in terms of support, growth and development. This "priorities position" may need re-visiting soon, before York manufacturers read between the lines and begin looking for more supportive elsewhere.

4.6.1 York Region Manufacturing Recruiting Environment

By applying our own "data analytics" to information accumulated by "CEB Talent Neuron", we can synthesize an overview of actual Manufacturing recruiting activity in York Region. (It should be born in mind that "searches" used in generating the following tables include only NOC codes directly related to traditional manufacturing, and exclude postings by manufacturers for more generic job titles such as "Software Engineers, Mechanical Engineers, or Programmers"). Table 4.6 lists the numbers of postings of *Manufacturing NOC's* in York Region for the last 4 years.

Table 4.6 **Manufacturing Job Postings - York Region by NOC** **Oct. 2013 - Oct 2017**

Position Name	NOC	4 Year Count
Other labourers in processing, manufacturing and utilities	9619	2,752
Material handlers	7452	2,588
Supervisors, electrical products manufacturing	9223	1,494
Other products assemblers, finishers and inspectors	9537	1,219
Welders and related machine operators	7237	1,036
Machine operators and inspectors, electrical apparatus manufacturing	9527	1,036
Machinists and machining and tooling inspectors	7231	820
Process control and machine operators, food, beverage and associated products processing	9461	734
Machining tool operators	9417	605
Industrial painters, coaters and metal finishing process operators	9536	592
Central control and process operators, mineral and metal processing	9231	486
Assemblers and inspectors, electrical appliance, apparatus and equipment manufacturing	9524	465
Tool and die makers	7232	455
Supervisors, food, beverage and associated products processing	9213	398
Electronics assemblers, fabricators, inspectors and testers	9523	380
Mechanical assemblers and inspectors	9526	371
Printing press operators	7381	361
Manufacturing managers	911	300
Sheet metal workers	7233	270
All others		3,602
Total		**19,964**

In terms of *types* of jobs within the above list, Table 4.7 provides an overview:

Table 4.7 **Manufacturing Postings by Job Type**
York Region **Oct 2013 Oct 2017**

Job Type	4 Year Counts
Full-Time	19,081
Permanent	16,808
Temporary	3,667
Contract	1,350
Part-Time	1,091
Internship	124
Co-op	1

Turning now to skills, the most frequently asked for "Hard" Skills over the last four years for those manufacturing jobs are reflected in Table 4.8. It is remarkable to note that "English speaker" is assessed as a *hard skill* by the CEB Talent Neuron filtering system.

Table 4.8 **Manufacturing Job Postings - York Region Top 20 Hard Skills Oct 2013 - Oct 2017**

	Hard Skill Name	4 Year Count
1	Blueprints	1,787
2	English speaker	1,296
3	Quality control	955
4	Material Handling	938
5	Forklifts	830
6	Computer numerical control software	667
7	Quality Assurance	655
8	Computerized numerical control machine	639
9	Micrometers	536
10	Goggles	429
11	Engineering drawings	412
12	Good Manufacturing Practice	386
13	Preventive maintenance	368
14	Milling machines	363
15	Welding machines	272
16	Lean Manufacturing	270
17	Welding equipment	232
18	Process controls	205
19	CNC lathes	199
20	Inventory control systems	196

Table 4.9 **Manufacturing Soft Skills York Region Oct 2013 - Oct 2017**

Skill	4 Year Counts
Detail oriented	5,932
Problem solving	3,084
Manual dexterity	3,017
Numeracy	2,553
Critical thinking	2,019
Oral and written communication	1,795
Team player	1,589
Continuous learning	911
Dependability	774
Clean Criminal Record	674

A comparison of the "Non-technical" skills in high demand for Manufacturing that was presented previously, and Table 4.9 above, reveals a very high level of agreement.

Within York Region, the largest source of manufacturer job postings is from Vaughan, followed very closely by Markham. Table 4.10 reflects the distribution.

Table 4.10 **Manufacturing Postings by City within York Region Oct 2013 - Oct 2017**

Name	Areas Div. #	4 Year Counts
Vaughan, ON	3519028	8,045
Markham, ON	3519036	7,389
Newmarket, ON	3519048	2,051
Richmond Hill, ON	3519038	1,284
Aurora, ON	3519046	534
East Gwillimbury, ON	3519054	133
Whitchurch-Stouffville, ON	3519044	114
Georgina, ON	3519070	71
King, ON	3519049	32
Unavailable	0	34
Total		**19,687**

Table 4.11 concludes the profile of the York Region recruiting environment, listing the top ten sources of the postings used in our analysis.

Table 4.11 **Manufacturing Job Posting Sources York Region Oct 2013 to Oct 2017**

Source Name	4 Year Count
JobBank.gc.ca	6,512
Kijiji	5,083
Corporate Site	2,768
Workopolis	2,240
LinkedIn	1,909
Monster	1,099
Jobillico	999
AllStarJobs	899
CareerBuilder	802
ZipRecruiter (US)	621
Others	1,994
Total	**24,926**

On October 27, 2017 there were 601 postings for (traditional) Manufacturing occupations, (including those from staffing firms), as defined by Canadian Manufacturers and Exporters association latest list of NOC codes.

- The average posting period was 32 days.
- The total "Candidate Supply" defined by the total pool of ICT workers in the GTA Labour Market, (employed or not), was 67,000.
- The top titles being recruited were Plow Manufacturing, Machine Operator, Labourer, Manufacturing Labourer, and Tool and Die Maker
- The top hard skills required on that day were Blueprints, Forklifts, Micrometers, Quality Control, and Quality Management
- The median market salary for all the positions posted was $36,900, versus a national average for the same group of positions of $36,800.

Clearly, this is only part of the Manufacturing picture. Our search tool has limitations in terms of searching by *Industry* instead of by *Occupation*, so we have not captured other types of employees in the industry apart from manufacturing-only roles. However, the total employment figures quoted earlier in this Section for Manufacturing, do indeed capture all employees.

4.7 Feedback from York Region Manufacturing Employers

We consulted York Region Manufacturing firms and one provider of recruiting services to local manufacture in two "roundtable" meetings. Again, we wanted to learn face-to-face about trends in their industry and their experiences in the local labour markets. All of the manufacturers were small-to-medium in size.

We asked about the key positions for which they are recruiting, the skills required of successful candidates for those positions, and the skills and capabilities they struggle to find. We wanted to understand what labour market information they have versus what they need, and what they observe in terms of trends and labour shortages. We asked them about the employee training they do themselves, and about what they believe should be added to or improved in government support and services programs to help them compete better.

4.7.1 Industry Trends

While manufacturing had been in decline during and immediately following the 2008/09 recession, since 2012 or so both the markets and manufacturing sales have been growing. The future to most is exciting, and they have positive outlooks, but there are some challenging trends they are facing.

4.7.2 Impacts of Evolving Technologies

Most of the manufacturers clearly recognized the importance and impact of advancing technologies and technology adoption. A number of them have been automating their

production processes for some time, primarily to reduce their labour burden. They have been re-inventing their methodologies in order to increase their productivity.

But most indicate that there is a limit to what you can automate cost-effectively in a very short period of time. While technology is important to these medium-sized manufacturers, it is not their most challenging issue just yet.

Of greater impact on them are 1) difficulties recruiting the talent they need to keep growing, and 2) harmful or potentially harmful impacts of government policy changes.

4.7.3 Workforce Patterns

It was encouraging to hear that most of the manufacturers we spoke with have excellent longevity in their firms, low turnover generally, except in a few areas. The plus side of this is that they are retaining all that wisdom and built-up productivity. The downside is that many of the long termers have more trouble than their younger counter parts in staying up -to-date technically, and in any case, they will be retiring soon, and several of those with whom we spoke are heavily engaged in succession planning and future-proofing.

At the same time, employers are encountering different kinds of challenges in recruiting younger people to come into their businesses and learn the ropes.

A lot of the people they need are for “entry level”, and basic labour, employers can pay them minimum wage or thereabouts. The difficulty is that there few job-seekers in the local labour markets who are attracted to these jobs. Many of York Region’s neighbourhoods are quite affluent, and the education levels are very high. Manufacturing is often not considered as a “career” destination as many people do not understand the transition that this sector has undergone in the last 10 years. Manufacturers often have to recruit outside the Region for these workers. But of course, then there is a public transit challenge. Most entry level people can’t afford to buy cars and drive them many kilometers a day to and from work and York Region Transit, while they are doing their utmost to serve everybody, cannot always meet the needs of commuters coming from Scarborough, Barrie and Durham.

Other manufacturers face behaviour and “fit” problems with new workforce entrants. While the “Millennial” stereotypes may be exaggerated and even dead wrong, many employers with whom we spoke have found some young applicants to have very high and unrealistic expectations in terms of position, salary and rate of advancement. Alternatively put, employers are often challenged with the poor attitudes, work ethics, communication skills and understanding of the real world they encounter during interviews.

Some of the employers had recruited people from outside the country, when they could find none of the skills they need in the domestic, reasonably local labour markets. In trying to bring workers to Canada, they found government rules and processes confusing, time-consuming and complex.

4.7.4 Positions Hard to Fill

Through our discussions, we rounded up a list of those positions are finding hard to fill, as follows.

Positions hard to fill

- technical salespeople
- plant managers
- entry level factory workers
- assemblers, mechanical and electronics
- maintenance mechanics and electricians
- welders, millwrights, tool and die makers – both apprentices and journeymen
- industrial machine operators
- software programmers / developers
- CNC operators
- software engineers
- hardware designers
- Android O/S specialists

The list corresponds reasonably well with the "Manufacturing Jobs in Demand" in the larger markets, but perhaps differs from the list very large manufacturers may generate.

4.7.5 Skills hard to find in Manufacturing

Asking about the hard skills manufacturers are seeking and not finding did not lead us very far, after the discussions about positions they find hard to fill. Unlike ICT hard skills, traditional manufacturing roles often require on-the job training to take place based on the specific and proprietary processes and equipment at play. It appears that while the manufacturers with whom we spoke understood the "technology" imperative, they were not (yet) pre-occupied with hiring a lot of hard-to-find ICT skills.

Instead, most of our manufacturers shared common views about the "non-technical", "softer skills they feel are essential for their businesses. It turns out that these skills are ones that are sought after in all three sectors studied. In addition to having great commonality with other sectors in terms of these skills, manufacturers had a great deal in common as well with regard to training their employees, being located in York Region, working with government services, and ideas for improving training and employment supports.

These will be examined in Section 6.

SECTOR ANALYSIS:

Financial Services

SECTION 5

The GTA is one of the world's largest financial services centres. It is home to the countries five largest banks, to the Canadian Head Offices of global insurance firms, financial and investment advisors, and accounting firms, as well as to one of the world's largest stock exchanges. The sector is a major contributor to Regional GDP and Employment.

In addition to the traditional Financial Services firm categories of Banks, Other Lenders, Investment Management and Advisory Firms, Insurance Firms and Accounting and Bookkeeping providers, we will be exploring a recently-arrived sector of the Canadian Financial Services scene, "FinTechs"

"FinTechs" are primarily new ICT start-up firms who are using current and emerging technologies to bring new or better-delivered financial services to customers in the financial "space". They are rapidly evolving, and many are partnering with banks and other financial institutions to access the investment capital they need to grow more quickly and reach more market. Their larger partners are in the relationship to participate in delivering new services, and to avoid losing market share to other FinTechs.

5.1 NAICS and NOC Definitions

The industry-based categories for Financial Services are fewer and simpler than those for ICT and Manufacturing. The industry codes being applied are as provided by Statistics Canada's *"North American Industry Classification System (NAICS) Canada 2012"* as follows:

Sector 52 - "Finance and Insurance", consisting of the following subsectors;

- 521 - Monetary Authorities – Central Bank
- 522 - Credit Intermediation and related activities
- 523 - Securities, commodity contracts, and other investment and related activities
- 524 - Insurance carriers and related activities
- 526 - Funds and other financial vehicles

Additional codes included are;

- 541212 - Offices of Accountants
- 541213 - Tax preparation services
- 541215 - Bookkeeping, payroll and related services

Based on these definitions we can derive from Statistics Canada *"Business Counts – Cansim Tables"* industry profiles for Canada, Ontario, and York Region.

Table 5.1 reflects the populations of businesses by subsector. It is worth noting that the ranking of sub-sectors is the same for Canada and Ontario, but a different pattern emerges for York Region, where most Financial Services firms are Accounting and Bookkeeping Services.

Table 5.1 **Business Counts - Financial Services Firms December 2016**

NAICS Category	Canada	Ontario	York
Securities, commodity contracts, and other investing [523]	15,912	6,553	793
Credit intermediation and related activities [522]	13,598	5,233	478
Insurance carriers and related activities [524]	12,078	4,673	649
Accounting and Bookkeeping Services	18,260	6,321	973
Funds and other financial vehicles [526]	716	341	28
Monetary authorities - central bank [521]	7	1	0
Totals	60,571	23,122	2,921

Table 5.2 reflects the numbers of firms based on the numbers of employees they have. As for other Canadian industries, small firms outnumber larger ones by a wide margin, but it is still in the large firms where the bulk of the employment happens.

Table 5.2 **- Numbers of Financial Services Firms by Employee Count**

Employment Range (Employees)	Canada Fin Svcs	Ontario Fin Svcs	York Region Fin Svcs
500 Plus Employees	181	104	8
50 - 499 Employees	2,335	1,076	110
5 - 49 Employees	22,845	8,250	804
1 - 4 Employees	35,210	13,692	1999
Total Firms with Employees	60,571	23,122	2,921

With regard to Financial Services occupations, a list of NOC codes may be found in Appendix F. Again, it is important to remember that not all people in Financial Services occupations are employed in Financial Services firms. (For instance, most companies in every industry sector have financial personnel of several types in their Accounting departments.).

5.2 Employment in Financial Services

Statistics Canada *"CANSIM Table 282-0008*[11] *"* - Labour force survey estimates (LFS), provides the information below for the NAICS "Finance and Insurance" sector, as the trend in total sector employment from 2012 through 2016, in thousands of people aged 15+:

	2012	2013	2014	2015	2016
Finance and insurance [52]	**755.7**	**767.2**	**779.7**	**791.0**	**808.1**

This reflects an average annual employment growth rate of only 1.7%, but represents about 4.5% of total Canadian employment. Of course, local employment levels in this sector differ from province to province and region to region.

Again, most firms employ four or fewer people, and a large portion of the total employment is concentrated in the large financial institutions in Canada's financial centres.

Please note that employment in Offices of Accountant, Bookkeepers and Tax Preparers is not included in the totals above, since the Statistics Canada Labour Force Survey data tables do not allow query for NAICS codes of more than two digits. In any event, employment in Accounting, Bookkeeping and Tax Preparation when added to the Finance and Insurance number will bring the total well over a million people.

We have the corresponding pattern for Ontario:

	2012	2013	2014	2015	2016
Finance and Insurance [52]	**356.8**	**375.5**	**380.5**	**388**	**409.3**

Note that the growth in employment in Ontario's Finance and Insurance sector has grown at about twice the rate for the whole country. Toronto's status as an emerging global financial centre likely accounts for this. Again, if we had access to the additional employment in Accounting, Bookkeeping and Tax Preparation, the current total employment would likely approach a million people.

For York Region, according to the Region of York **"Employment and Industry Report 2016",**

"Finance and insurance added 13,300 jobs over the past 10 years, growing at an annual rate of 7.0 per cent …

Following the loss of American Express Canada in 2015, a major financial services employer, the finance and insurance sector experienced a rebound of 990 jobs in 2016, a 6.4 per cent increase in growth. York Region is home to corporate or divisional back-end operations (e.g. processing and call centres) of many financial institutions, alongside hundreds of branch-level places of employment. In total, York Region's financial sector consists of approximately 27,000 jobs."

The Region's estimate for the number of Finance and Insurance firms underlying their employment estimate is ~ 1,822, and as such, Accountants and Bookkeeping services, (NAICS 5412) are excluded from their employment total. When the Accountants & Bookkeepers are added into the mix, the number of firms becomes 2,921, as indicated in Tables 6.1 and 6.2 above, and employment likely approaches 40,000.

5.3 Industry Trends

5.3.1 Banking

The Government of Canada's "Invest in Canada" website boasts that Canada has the strongest banking system in the world, with 29 domestic banks,24 foreign bank subsidiaries, 25 full-service foreign bank branches, 4 foreign bank lending offices and 23 foreign bank representative offices.

Certainly, compared to the other countries of the world, Canada survived the 2008/09 global recession reasonably well. Our banks are well capitalized, and maintain conservative balance sheets.

At the same time, however, in Canada, there have been low interest rates for some time, and real estate prices have risen sharply to what many refer to as "untenable" levels in Toronto and Vancouver. Despite recent government policy moves to cool down the markets, there are still a lot of low rate mortgages out there, which are at risk if interest rates rise. (While the Federal Government appears unworried, Moody's downgraded the bond ratings of the major banks in 2016.) Nevertheless, the banks are profitable, growing, and investing in the U.S. banking markets while U.S. banks are retreating.

Price-Waterhouse Coopers *"Canadian Banks 2017 - # Bankovation",* (available at pwc.com/ca/canadianbanks), reports the recent performance of the "Big Six" banks as follows:

> *"Despite underlying economic challenges, especially the recent slump in the energy sector, Canada's Big Six banks achieved solid revenues and posted strong returns.*
>
> *The Big Six banks' consolidated revenues were CA$133.6 billion in FY16, up 8.6% from CA$123.1 billion in FY15. But the weighted average return on equity continued the decline observed in recent years and stands at 13.7% compared to 14.5% a year ago, largely driven by an increase in regulatory capital."*

The banks are a very attractive employer choice for M.B.A. and other Business students in post-secondary programs, because they are perceived to be the most stable, well capitalized and sustainable place to build a career. Contrary to what has been observed in many young people, students attracted to careers in banking typically expect to spend at least five years with their first employer, and like the concept of a life-long career with continuing advancements. The banks can afford to operate extremely comprehensive and sophisticated training régimes to develop and retain their employees.

Perhaps the most significant trends, challenges and opportunities at Canadian banks right now revolve around their dealing with rapidly changing technologies, and the rise of "FinTechs". This very critical area is similarly of vital concern to all other kinds of Financial Services firms, and so it is examined separately below.

5.3.2 Wealth Managers and Investment Advisors

Currently no one can deny the positive effects of Donald Trump's promises to strongly invest in U.S. infrastructure, restore manufacturing jobs and reform taxes in the U.S., have had on U.S. stock markets. The Dow has touched a few all-time records highs. Nevertheless, the Securities Management and Investment industry faces challenging trends.

According to WealthManagement .com – *"The Financial Services Industry in 2030" by* Matt Lynch, October 2013, (http://www.wealthmanagement.com/viewpoints/financial-services-industry-2030), the following are expected future industry developments:

> *"The wealth gap will become less pronounced with the emergence and growth of a new middle class of consumers. The mix in household wealth will change slightly as a higher percentage of consumers participate in the capital markets and as new forms of ownership emerge, such as more small businesses and shares of micro-cap businesses. We expect major institutions such as stock exchanges, wire houses, and banks (as underwriters) to have less relevancy in the years ahead in terms of the overall capital markets."*
>
> ***Intergenerational Transfer of Wealth***
> *"As the baby boomers age, wealth will transfer to Generations X and Y. .... How financial advisors work with multiple generations—in advance—will be critical.*
> *The average financial advisor is older than 50, yet most do not have a succession plan in place.. … it is critical to make this field a compelling career choice for young people."*
>
> ***Women as a Major Market***
> *"Women currently control the majority of personal wealth (51.3 percent). … Women also are expected to inherit about 70 percent of the estimated $41 trillion in intergenerational wealth transfers by about 2050 (Havens and Schervish 2003). Additionally, women tend to live six to eight years longer than men and will need ongoing financial advice…"*
>
> ***Diversity and Cultural Changes***
> *"… Younger generations are increasingly diverse. As of 2008, 58 percent of Millennials considered themselves white or Caucasian and 42 percent were a minority."* (US data) "*Social diversity is increasing as well, with a growing number of single heads of households as well as gay and lesbian couples who can benefit from financial advice. "*
>
> ***Technology***
> *"The Internet will continue to fuel the technology revolution and online investor options will continue to grow in importance.… Offering innovative technological solutions will be an increasing need—and expense. …Technology will continue to allow more consumers to design their own product offerings, lessening dependency on banks or large institutions …"*

5.3.3 Insurance Companies

According to the Canadian Life and Health Insurance Association's *"Canadian Life and Health Insurance Facts"* book, 2016 Edition:

- The industry insures over 28 million Canadians,
- The industry holds $760 billion in assets in Canada, $1.6 trillion in assets globally
- It **employs 148,600 Canadians,** 55,200 full time, and 93,400 advisors/agents.
- It **consists of 156 insurers,** 133 are in health, 96 are in life, some are in both.
- Its revenue from premiums in 2015 was $103 billion
- 22 million people are covered by life insurance, 24 million are covered by health insurance, and the industry manages two-thirds of private pensions

According to the Insurance Bureau of Canada's *"2017 Fact Book",* which reports on the Property and Casualty insurance industry:

- Property & Casualty insurance firms directly wrote $53.4 billion in premiums in 2016.
- Out of a total of $170.2 billion in assets, $111.3 billion are invested.
- The industry **employed 124,900 people in Canada in 2016**
- There are **203 private insurance companies** in this sector in Canada, (presumably excludes brokers etc.)

Global warming is evident, and driving violent or extreme weather patterns around the world, resulting in floods, forest fires and landslides, claiming many lives and driving billions in property losses. The geopolitical landscape is unstable at best, with terrorism, revolutions and wars causing even more disaster. World economies are experiencing increased risk and uncertainty, driving indecision and conservative behaviour when people consider spending their disposable income.

On the other hand, people are living longer, rates of injury, illness and natural death are declining, and the global population continues to grow. Technology is advancing and opening doors to new ways of managing risk, and new ways of serving insurance clients more effectively and more cheaply. As such, insurance companies have a lot to occupy them, a lot of market opportunity, but a number of real challenges as well.

Insurance companies have a large number of older employees who will be retiring over time. At the same time, they are not a very attractive career destination for young people today, their image really needs polishing, and insurance careers need promoting. Technology is encouraging new entrants into the industry, and while insurance executives are aware of the market impacts, and admit fearing major share loss resulting from new competitors, they seem slow in digital adoption, and jumping into the "FinTech" subsector.

As such, the Insurance sub-sector faces serious recruiting problems and labour shortages in the coming years.

5.3.4 Accounting and Bookkeeping Firms

The Chartered Professional Accountants of Canada article *"Drivers of Change -Navigating the Future",* proposes a five-element framework for the Accounting industry to assess the current global trends and plan strategy going forward:

Economic considerations:
Global uncertainty, and the potential effects of the NAFTA renegotiation and the impact of Brexit, slow global economic growth, (2% p.a.), the heavy debt loads Canadians are carrying, and poor Canadian competitiveness in global markets

Environmental:
Global warming and worsening weather patterns continue to cost the Canadian economy more every year. With the global population increasing, the world's resources are no longer sustainable, and basically, we are running out of water.

Technological:
New technologies and processes are rapidly evolving and being deployed around the world. Accountants must take advantage of emerging technologies internally, to remain competitive. Finance must work closely with IT to ensure reporting and planning systems are effective. Finance teams need to acquire, mine and analyze large volumes of data, understand more and anticipate better.

Societal:
World population is growing rapidly, demographics are shifting. While the population is "aging", and people are living longer, there are more young people in the world today than ever. Youth and children make up 46.2% of the total aboriginal population. Workforce strategies need to take these trends into account.

Geopolitical:
The world continues to be politically unstable. Hot spots continue relentlessly to be hot and unresolvable. This leads to economic uncertainty, and must be accounted for in developing trade policies and international business.

5.4 Labour market

"Too many bankers? Toronto has a financial services skills surplus, report finds", a Globe and Mail article by Rachelle Younglai , August 8, 2017, reveals:

"A new report from LinkedIn Corp. says that Toronto has a surplus of workers with banking, legal and other financial-services-related skills. The social-networking website is seeking to identify gaps in Toronto's labour market, and said the "most abundant skills" in the city are banking, legal advice, risk management, mortgage financing, trading, investing and accounting."

By contrast to that, recruiters are reporting a very "tight" labour market for accounting and finance personnel! In fact, they report that the following is happening:

- Higher salaries are being offered, along with better benefits.
- Flexible schedules are being offered.
- Specialists in specific areas are increasingly being hired on a project basis only.
- New software tools with "embedded knowledge" are applied by non-specialists when human talent cannot be found.
- Extra attention is being paid to retention and internal training programs.

5.5 FinTechs

This subsector of financial services is too new to have been separately recognized by Statistics Canada. (They might fall into ICT categories). But as a group, they are the fastest growing, most disruptive and seemingly most threatening enterprises in the industry

Wikipedia defines FinTechs as follows:

"Financial technology, also known as FinTech or fintech, is an industry composed of companies that use new technology and innovation with available resources in order to compete in the marketplace of traditional financial institutions and intermediaries in the delivery of financial

services. Financial technology companies consist of both startups and established financial and technology companies trying to replace or enhance the usage of financial services of incumbent companies."

According to letstalkpayments.com's article *"Toronto's FinTech Ecosystem: 74 Companies Reshaping Canada's Financial Services Industry"* by Elena Mesropyan, January 27, 2017

"*Canada has been recognized as one of the best markets to build and test innovative FinTech solutions, and the province of **Ontario, in particular,** has among the highest concentrations of tech firms outside Silicon Valley, thanks in part to cheaper costs and the cluster of Toronto and Waterloo area universities producing engineers and developers.*

The article then goes on to list and provide **links to seventy-four FinTech firms** that are operating in the area. The kinds of services these firms offer varies greatly, but they include:

- data analytics,
- digital payments, crypto-currencies, Bitcoins,
- biometrics, security,
- "blockchain" governance,
- "marketplace lending",
- payment authorizations,
- sales financing systems,
- accounting software,
- wealth management tools,
- mobile apps for almost every kind of financial transaction imaginable,
- investing and crowd-funding,
- remote driving data for insurers,
- real estate transactions,
- restaurant applications and insurance.

FinTechs, and advancing technologies in general, are very strongly affecting all the types of Financial Services institutions. Some of them are embracing the FinTech concept, and buying in or becoming Fintechs themselves. Others seem to be sitting on the sidelines, acknowledging the trend but hesitating to invest.

The following "bullets" are extracted from Price Waterhouse Coopers *"Redrawing the Lines",* an Executive Summary of their 2017 Fintech survey of financial institutions. They characterize what is happening in the Financial Services sector related to advancing technologies

"More than 80% believe business is at risk
FinTech is a driver of disruption in the market. Financial Institutions are increasingly likely to lose revenue to innovators, with 88% believing this already is occurring…"

"Financial Institutions are embracing the disruptive nature of FinTech
Traditional Financial Institutions have noted the market disruptions that are due to the influence of FinTech and are responding to it. … 77% are increasing internal efforts to innovate and 56% have put disruption at the heart of their strategy…"

"Financial Institutions are learning to partner and integrate
FinTech companies create an ecosystem that fosters the collection of vast amounts of data and builds trusted relationships with clientele. Financial Institutions have realized the potential of this and are increasingly partnering with FinTech companies."

"Investment in enabling technologies will help narrow the gap
To be able to provide a new digital experience for their customers, incumbents are focusing on integrating their legacy systems with data analytics and mobile technologies… Financial Institutions will (later) be able to invest in the technological advances such as Artificial Intelligence, Blockchain, Biometrics and Identity Management."

"Blockchain is moving out of the lab
There has been an increased familiarity with Blockchain, coupled with an expectation for more Financial Institutions to adopt Blockchain as part of their production system or process in the next three to five years."

"Regulations trigger disruption and innovation
Incumbents see regulations as barriers to change and a source of uncertainty. The main regulatory barrier to innovation, as indicated by 54% of participants, are data storage, privacy and protection."

5.6 Jobs and Skills in Demand in Financial Services

The industry trends described above seem to be changing the nature of the jobs that Financial Services employers are looking to fill, and the skills they want their recruits to have. Traditional "financial and accounting" disciplines remain, but now recruiters expect applicants to have "digital skills" and strong "non-technical" skills as well. Consulting a variety of publications related to employment in the sector enabled the synthesis of lists of jobs in high demand and skills that employers are looking for, but often not finding, in the applicants they interview. The skills listed below, are divided into three categories; traditional formal financial skills, "digital" skills, and "non-technical", softer skills.

5.6.1 Jobs in high demand:

- IT Executives, CIO's
- IT Business Analysts
- Accounting Managers
- Accountants
- Controllers,
- Internal Auditors,
- Financial Analyst
- Cost Accountant
- Payroll Specialists
- A/P and A/R personnel

A developing trend is that a few CFO's and other executives from "traditional" financial firms are leaving those firms to join smaller, flatter and more agile FinTechs, where they can have a greater influence. We may soon be able to add CFO's to the above list of "Hot Jobs"!

5.6.2 Traditional financial skills frequently sought:

- Understanding of regulatory compliance
- Risk management
- STEM skills
- Financial Reporting
- Investment Banking
- Corporate Social Responsibility
- CPA, CSC,
- CRCM (Reg. Compliance) and FRM (Financial Risk) designations

5.6.3 Digital skills becoming essential:

- Good "all-around" IT Skills for all positions
- Advanced Excel and Access
- Big Data and Data Analytics
- IT / Cyber Security
- Machine Learning Expertise – Artificial Intelligence
- Domain expertise – Knowledge of the industry subsector as well as digital disciplines
- Blockchain and distributed ledger expertise.
- IT Governance
- Mobile banking systems
- E-trading systems
- SAS & Python
- SQL
- G/L software

5.6.4 Non-technical skills typically required:

- Communications skills, verbal, written and listening
- Integrity
- Sensitivity
- Problem solving
- Analytical skills
- Commercial awareness
- Independence, self-starting, pro-active
- Motivated, ambitious
- Emotional intelligence
- Leadership
- Collaboration
- Adaptability
- Creativity and innovation

Based on what the literature indicates, Financial Services employers face the same daunting challenges as do employers in ICT and Manufacturing. There isn't a dire scarcity of one or two particular skills. There is an evolving requirement that the people they hire have wider "skill sets", than just core discipline qualifications that used to be an entry ticket for careers. But the reality is that the "gap" that prevails is between what employers would like to have, and what they can realistically expect to find.

5.7 Financial Services Recruiting Environment in York Region

Once again applying our own "data analytics" to information accumulated by "CEB Talent Neuron", we can explore actual Financial Services recruiting activity in York Region. As before, the "searches" used in generating the following tables are focused on Financial Services occupations being hired, based only on NOC codes directly related.

Table 5.3 lists the no.'s of postings of Financial Services *NOC's* in York Region for the last 4 years.

Table 5.3 **Financial Services Job Postings York Region by Job Title Oct 2013 to Oct 2017**

Job Title	NOC	4 Year Counts
Accounting technicians and bookkeepers	1311	4,029
Financial auditors and accountants	1111	3,529
Securities agents, investment dealers and brokers	1113	2,579
Insurance, real estate and financial brokerage managers	121	1,923
Supervisors, finance and insurance office workers	1212	1,675
Other financial officers	1114	1,068
Insurance agents and brokers	6231	988
Financial and investment analysts	1112	863
Collectors	1435	827
Insurance adjusters and claims examiners	1312	515
Financial managers	111	404
Payroll clerks	1432	355
Insurance underwriters	1313	129
Banking, insurance and other financial clerks	1434	115
Accounting and related clerks	1431	86
Senior managers - financial, communications and other business services	13	69
Assessors, valuators and appraisers	1314	45
Customs, ship and other brokers	1315	31
Financial sales representatives	6235	23
Banking, credit and other investment managers	122	2
Total		**19,255**

Note the high demand in the Accounting fields, which makes sense, given that York Region has many small accounting offices, and such positions are required by all industry sectors.

Table 5.4 reflects the types of jobs as per the above list and time period:

Table 5.4 **Financial Services Postings York Region by Job Type**

Employment Type	4 Year Counts
Full-Time	18,393
Permanent	16,963
Temporary	2,308
Part-Time	1,633
Contract	1,458
Internship	119
Co-op	57

As for the other sectors we have reviewed, the great majority of postings are for full-time permanent positions.

Table 5.5 lists the top "Hard" skills being sought in the postings:

Table 5.5 **Financial Services Job Postings Top 20 Hard Skills York Region Oct 2013 to Oct 2017**

	Skill Description	4 Year Count
1	Accounts payable	2,929
2	Accounts Receivable	2,541
3	Bilingual	1,196
4	General Ledger Software	1,180
5	Bilingual French	902
6	Accounting software	878
7	Intuit QuickBooks	707
8	Enterprise Resource Planning Software	602
9	Generally Accepted Accounting Principles	480
10	Credit risk	429
11	Public accounting	397
12	Sage Simply Accounting	392
13	Sage ERP Accpac	308
14	Corporate social responsibility	290
15	Investment banking	287
16	International Financial Reporting Standards	272
17	Financial accounting	260
18	Investment Management	248
19	Anti-money laundering	245
20	Internal audit	242

Table 5.6 reflects the Top 10 Soft Skills appearing in the 4 years of job postings. It is interesting that "Microsoft Office" is listed as a "Soft" skill, and that Integrity is listed as a skill at all.

Table 5.6 **Financial Services Job Postings Top 10 Soft Skills York Region Oct 2013 to Oct 2017**

Rank	Skill Descrition	4 Year Counts
1	Oral and written communication	6,702
2	Detail oriented	4,159
3	Microsoft Office	3,459
4	Problem solving	2,571
5	Organizational skills	2,125
6	Time management	2,120
7	Marketing	1,904
8	Wealth management	1,842
9	Integrity	1,822
10	Analytical skills	1,797

Table 5.7 shows us where the Financial Services firms posting the jobs are, based on the numbers of postings.

Table 5.7 **Financial Services Job Postings by City within York Region Oct 2013 to Oct 2017**

Name	Areas Div. #	4 Year Counts
Markham, ON	3519036	8,659
Vaughan, ON	3519028	5,989
Richmond Hill, ON	3519038	2,103
Newmarket, ON	3519048	1,076
Aurora, ON	3519046	716
King, ON	3519049	269
Georgina, ON	3519070	144
Whitchurch-Stouffville, ON	3519044	139
East Gwillimbury, ON	3519054	70
Unavailable	0	90
Total		**19,255**

The pattern corresponds to industry intensity and population as one would expect.

Finally, Table 5.8 shows the website and job board sources for the postings counted.

Table 5.8 **Financial Services Postings Sources York Region October 2013 to Oct 2017**

Source Name	4 Year Counts
Corporate Site	5,935
LinkedIn	4,343
Workopolis	3,969
Kijiji	2,580
CareerBuilder	1,963
Monster	1,117
JobBank.gc.ca	1,090
JobServe	660
Jobillico	617
Career Beacon	590
Others	3,210
Total	**26,074**

On October 28, 2017 there were 473 postings for Financial Services occupations, (including those from staffing firms), as per the list of NOC codes in Appendix F

- The average posting period was 33 days.
- The total "Candidate Supply" defined by the total pool of ICT workers in the GTA Labour Market, (employed or not), was 244,000
- The top titles being recruited were Accounts Payable Clerk, Bookkeeper, Financial Analyst, Accounting Clerk, and Senior Accountant
- The top skills required on that day were Bilingual, Accounts Receivable, Bilingual French, Accounting Software and Accounts Payable
- The median market salary for all the positions posted was $76,500, versus a national average for the same group of positions of $80,650.

5.8 Financial Services Employer Feedback

To engage with employers and with other stakeholders recruiting in the local Financial Services labour market, we spoke with local Accounting firms and local Financial Services recruiting firms, in face-to-face consultation meetings. We also connected with regional representatives of one of the top five chartered banks, of the Business Development Bank of Canada, and of a national provider of insurance and other financial services.

In each of our encounters, we explored the trends in their industry sub-sectors, the key positions for which they are recruiting, the skills they need for those positions, the skills they find hard to find in applicants, and any labour shortages they are experiencing. We investigated employee training, and what they feel our education systems should add to or change in their programs. We asked as well about their experiences with government employment and training supports.

5.8.1 Industry and Workforce Trends

Those we consulted were in very different ends of the Financial Services, and from different-sized organizations. Nevertheless, they had common observations to make at a high level about industry trends.

As reported in much of the literature, evolving technology is having a major impact on how these organizations serve their clients. Online communications and tools, mobile applications, and new "FinTech" offerings such as "Apple Pay" are areas that will affect all their markets, their competition and their strategies, sooner or later. All of the firms we consulted emphasized that they are first and foremost client-focused, and that technology should improve, not harm, the customer experience. New technologies are also driving changes in their internal business processes, from major forays into "Big Data Analytics," to simple migration to the Cloud, of current accounting software. Investments in technology change, of course, tend to be much larger in the very large firms. While smaller firms are keeping up, they remain focused on serving customers well and personal relationships in doing so.

In terms of the people they currently look for, there was virtual unanimity regarding the need for recruits to come with good all-around digital literacy, including familiarity with standard "Microsoft Office Tools", along with experience in using financial and accounting software systems and tools. These of course must accompany the traditional financial training and certifications needed for their functions

The recruiting firms report that the local market for a wide variety of financial services jobs is very tight, with unemployment being at its lowest level in a very long time.

5.8.1.1 Smaller, Local Firm Feedback

There were differences, however, in the types of positions the different firms were typically recruiting. One of the Accounting firms works with a university to provide experiential learning to accounting students. Other positions mentioned both by the Accounting firms, and by the local recruiters, were;

- Accounting Managers,
- Bookkeepers
- Customer Service personnel,
- Accounts Receivable specialists,
- Accounts Payable personnel and
- Payroll Specialists.

While the Accounting Profession has unified the designations of various types and levels of accountant into “CPA”, market demand / preference is for “CA’s” or perhaps “CGA’s”.

The challenges the smaller local firms find in recruiting lie not so much the formal or digital skills they need, but

- in attracting professionals and managers from downtown labour markets, to work up in York for less money, and
- in verifying the true skills and abilities of applicants for both accountant and bookkeeper positions. (Their experience is that applicants often exaggerate or misrepresent their knowledge, only to be found out later,
- in ensuring that the customer-facing people they hire have the right skills to solve customer problems, and maintain customer good will.

Skills important to the smaller firms are very similar indeed to those found hardest to find in the other two sectors under study, in that they are primarily in the “non-technical” areas. Section 7 which follows this one, very faithfully reflects the feedback received from the accountants and recruiters in terms of needed skills hard to find.

With regard to training, it is interesting to note that the small accounting firms are both very heavy trainers, and sensitive to the vital need to meet high standards and ensure the proper qualifications of all their staff. The Recruiters we spoke with enthusiastically work with their clients to identify their skill needs and to help with training issues as they reveal themselves.

5.8.1.2 Feedback from Large Banks and Insurance Companies

The workforce and recruiting picture is very different for the big banks with whom we spoke. They both have very solid brands in the market, and don’t find difficulty in attracting good candidates. “Labour shortage” was not a major challenge for either of them. They both have branch networks, and the backbones of their businesses lie in recruitment of well-qualified advisory and account management personnel.

At one bank, the two branch business streams are retail and commercial banking. In retail they recruit Client Advisors and Banking Advisors. For certain roles they will hire the right person with a high school education and appropriate experience, for other roles they require a college or university education. The critical attributes they seek in these customer-facing positions are customer service skills, sales skills and leadership qualities, and they include;

- retail experience,
- "target orientation",
- emotional intelligence,
- an eagerness to learn,
- the ability to build rapport,
- genuine interest in clients and their needs,
- listening and "discovery" skills in client interviews,

- team playing, partnering,
- drive / motivation,
- personal flexibility, (working hours),
- math skills,
- computer skills and
- the ability to work several concurrent initiatives.

Their two main Commercial banking roles are Account Manager and Associate Account Manager. For these roles, pretty well all of the above skills are required, but a university degree is required, (M.B.A. applicants are common). Applicants must be able to read and interpret financial statements, they must have solid relationship building skills, abilities to work with "Centres of Influence", and comfort working in the business community.

The same bank mentioned that they also recruit IT type positions, both "downtown" and for their branch network. "Data Scientists" and "Scrum Masters" were examples given.

This bank has an intense and extensive training régime for employees from day of entry right through their careers. The beginner training for Client Advisor is six weeks. For Banking Advisor, it is seven months. It provides three-phase rotational work assignments for new employees in various bank environments to provide exposure and experience with different activity types.

The key positions in the second bank's branch network are Account Managers, who offer business loans / financing to their clients, and Business Advisors, who help business owners and leaders with planning, strategy, operations, best practices and management disciplines.

As technology is increasingly automating many of the traditional financial functions at this second bank, the skills and qualifications they are seeking nowadays in their Account Managers and Advisors lie, as is the case for the other bank, in the business development area, and include client-centricity, anti-money laundering knowledge and experience, negotiating skills, an ability to "scan the environment" and see the "big picture", use of social media for business, and digital literacy.

Banks work closely with community agencies

Both of the banks with whom we spoke, get many of their employees through working with a not-for-profit employment service agency. They support the training and orientation programs the agency has for making job seekers "job-ready", and they post many of their jobs with and through that agency. They promote programs to help newcomers to Canada, (both job-seekers and entrepreneurs), gain the support and training they need to launch a business or get hired into their field of choice. One interviewee sits on an Advisory Council of a GTA College, and the other sits on the Advisory Board of the employment service agency. In using this valuable channel of support, they are both saving a lot in recruiting fees, helping the community, and making the labour market function more efficiently.

The Insurance firm representative with whom we spoke shared some of the same attributes the two banks displayed. Advancing technology is transforming their markets and work processes, and they are using technology to improve customer experiences. As you might imagine "Big Data" and Analytics are at the centre of insurance activities. The person with whom we spoke anticipates a significant labour shortage to develop as the large older cohort retires from the company. As such they are establishing various sources of replacement talent.

They require all the skills in their recruits for customer-facing positions that make them good with customers. When they recruit Actuaries and Claims personnel, they of course require strong STEM and analytical skills. As you might imagine, insurance companies spend a lot on legal services, so they hire lawyers as well. Soft skills they need also include communications, customer service orientation, business acumen, professionalism, results orientation, agility and the ability to influence others. They train employees a great deal from cradle to grave.

Employer Feedback

common to all three target sectors

SECTION 6

6.1 "Non-technical" skills and attributes that are often missing in applicants

Universal among the employers with whom we spoke from all three target industry sectors, were their frustrations and difficulties in finding recruits that **have the "non - technical" skills**, which appear to have become as important or ***more important*** as technical skills. In fact, the "Soft", "Foundational" and "Essential" skills seemed to represent a bigger "gap" area than industry and subsector-specific skill shortages.

Employer-reported experiences from interviewing college and university-level graduates indicated a wide range of challenges, including poor basic linguistic, literacy and numeracy skills, limited communication and people skills, poor analysis and problem-solving skills, and no understanding of basic business principles and concepts.

What follows is a list that captures the "Soft" skills emphatically mentioned as ***critical but often missing in applicants***, during our employer consultations in all three target sectors;

1) adaptability, openness to change,
2) problem solving and analysis,
3) dealing with and resolving conflict,
4) independence, self-startability, pro-activity,
5) communication skills - verbal, written and listening,
6) customer orientation and sensitive customer service,
7) the ability to communicate with clients and co-workers alike **on the telephone,**
8) understanding customer problems when they call in to the help-desk, "triage" of the problems and directing customers to the appropriate department,
9) ability and willingness to talk face-to-face with superiors, co-workers and subordinates to solve problems,
10) proclivity to making eye contact with others,
11) time management and strong commitment to meeting deadlines,
12) the ability to manage one's work, to organize it, prioritize tasks and do multiple projects,
13) the capability of focusing on and completing individual tasks and steps amid distractions, (people, tweets, texts, and emails),
14) sensitivity to newcomers, taking advantage of their strengths,
15) a willingness in senior level employees to change, to learn and to grow,
16) positive attitude and strong work ethic, (can they be taught?).

Some of the skills listed above are "subsets" of others mentioned, and likely the list can be shortened. The good news, however, is that employers are strongly united in their contention that there is an important **"gap"** on the Soft Skill side. Some believe it is best to hire for fit and attitude, and to train for the technical requirements. They agree that "soft" skills can very often be much harder to teach than "hard" ones. So, we have an opportunity…

6.2 Labour market information (LMI)

Several employers surprised us by telling us that there is no need for governments to invest in better labour market information. Other employers were associated with recruiting firms who give them all the information they need. Some others, however, indicated they would appreciate having free access to more comprehensive, locally relevant data in order to determine labour market trends, compensation levels, and available worker supply. It should be born in mind, however, that other labour market stakeholders, (educational institutions, job seekers, employment service providers and policy makers need good LMI in order to make good decisions.

6.3 Employer Training

The literature tells us that Canadian employers don't train their employees anymore, that average employer training investment has dropped 40% or so since 1993, and that they expect the education system, the government, and people's parents to do all the training. The only problem is that employers don't know about that.

EVERY employer with whom we spoke reported that they train their employees extensively, on the job, in internal classroom programs, through vendor training, and through off-site development programs. They typically fund employee-selected courses up to a reasonable level, as long as the training or education supports or relates to the employees work or productivity.

6.4 Government Support

Several of the employers in our meetings brought up the Canada Ontario Job Grant and pointed out that while it was a great initiative, the rules need to be loosened and more flexible for the program to have a much more positive impact. However other employers reported that the current COJG rules are even more restrictive and the program is more difficult to access. While everyone supports clamping down on fraud, legitimate investment in training should not be choked off. Things may be going the wrong way, especially given that the intent of the program was to be ***employer-driven!***

Other feedback we got concerning government support included recommendations that;

- local transportation be enhanced to reach further into York Region, and couple more seamlessly with Metrolinx services in and out of the Region,
- employers need help to get better connected with what talent and skills are coming into the country via immigration, and how to include those resources in their talent pools. While many employers have made use of, or attempted to make use of, the Express Entry program and the Canada Job Board, but there is still confusion and employers need more orientation and training in terms of how to recruit outside the country when there are no domestic human resources available with the right skills.

6.5 York Region – Specific Employer Challenges

Being located in York Region is both advantageous and problematic at the same time, according to local employers.

Advantages

Being located within the GTA just north of Toronto, the Region's employers have access to an extremely large labour pool of highly educated people. At the same time the Region is a very attractive place to live and work for families seeking fresh air, green spaces, lakes and proximity to many "cottage country" attractions. With Seneca College in the Region, and York University on the way, post-secondary education is close by. While the cost of living in York Region is not low, it is lower than the cost of living downtown in Toronto. Residents of York Region have almost 600,000 local jobs here to choose from, if they want to avoid commuting down town daily

Disadvantages

The flip side is that those living in Toronto have a tough daily commute if they come to work in York Region, and such a commute costs them time, money, and mental health. Many new graduates and millennial workers enjoy the cultural amenities, the vibrant night life and easy access to many attractions that living in the City represents. At the same time, average salaries in the city are higher than those in the Region, which helps to offset higher housing costs. Downtown dwellers that work downtown can take public transit to work, saving time, money, and mental health.

York Region is very large, and commuting distances even within the Region are long. Local public transit serves the three southern densely populated communities very well, but the Northern 6 communities have less frequent, less extensive service, which is a commuting challenge for those who don't have cars.

So, York Region employers "compete" with Toronto firms for employees, and attracting people to work in the region can be challenging. The density of the local labour pool is low in the northern areas of the Region, but they are typically quite affluent. It is hard for employers there to find entry-level employees locally, whether it be for factory assembler jobs, or higher skilled technical roles.

Reconciliation

When we examine initiatives in the Region to address skill gaps, better match employer needs, and find opportunities for under-represented jobseeker groups, we need to take the Region's proximity to Toronto and its geography-related challenges into account

The Supply Side of the Labour Market: Under-represented Groups

SECTION 7

So far in this report, we have focused upon the trends, employment and employers in three target industry sectors. We have learned that there are a lot of similarities among the problems faced by employers in each of the three target sectors, and that real skill gaps and looming labour shortages currently characterize each of their labour markets.

In much of the literature underlying the "challenges", general recommendations for *addressing the skill gaps and labour shortage problems* are frequent, and consistently take aim in *at least* four directions:

1. Improve the quality and quantity of students coming through the education systems. Ensure that all secondary school graduates have solid essential skills. Promote more "STEM" training and experiential learning. Inform students about labour market realities.
2. Better align the skills needs of employers with curricula in schools, colleges and universities. Inter-connect employers, employment agencies and educational institutions so they can assess current *and future* labour market needs, and evolve improved curricula.
3. Strongly drive "Digital Adoption" in all of the industry sectors. Promote upskilling in STEM areas. Encourage all employees to acquire computer literacy and business skills.
4. Take advantage of job seeker groups who are under-represented in the labour market today and who face barriers to finding meaningful work, compared with the rest of the population. These groups include;
    a. **women**, who are still under-represented in many workforce areas, especially in executive roles, STEM- related jobs and in ITC roles,
    b. **young people**, between the ages of 15 and 24*, who experience high unemployment, and a comparatively low presence in our workforces,
    * Some government agencies define "Youth" as 15-29-year-olds, so some statistics may be imprecise
    c. **indigenous people**, whose under-representation in the labour markets relate to barriers they currently face in terms of status, education, and social conditions,
    d. **"displaced workers",** experienced job seekers permanently laid off from jobs they held for many years in declining industries,
    e. **disabled people,** typically highly motivated, capable and available,
    f. **internationally educated workers,** who often have excellent technical skills and very high motivation, but who face barriers either in coming to Canada or in finding work here, based on certification issues, language challenges, and other factors.

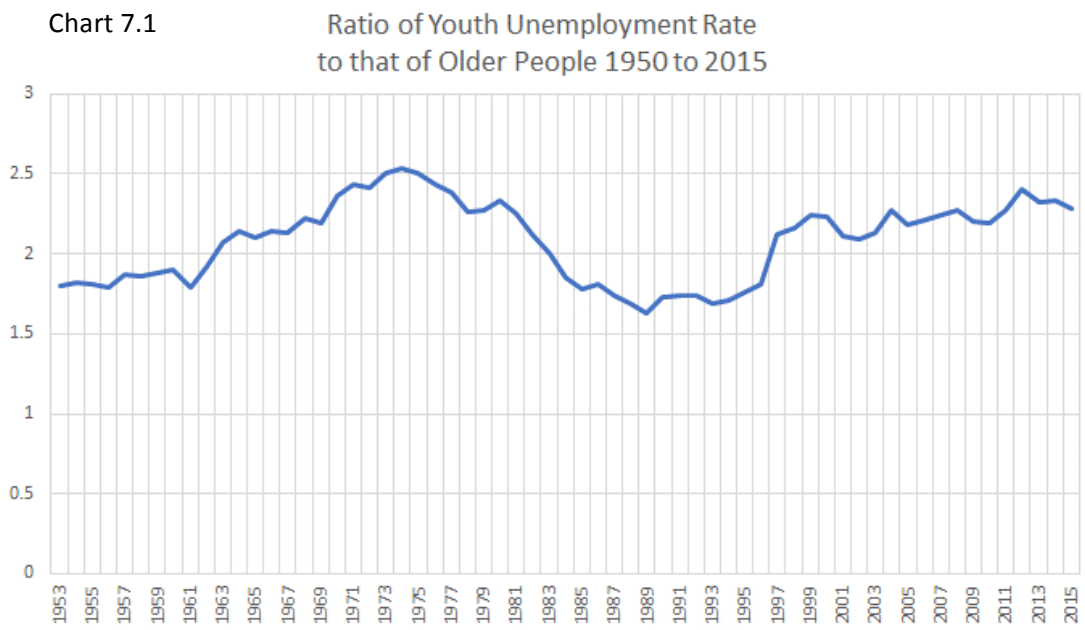
Regarding recommendation 4. above, three of the six under-represented groups will be examined next, to profile their situations and uncover some of the reasons they don't participate in the workforce to the same level as the general population.

7.1 Youth

7.1.1 Employment and Unemployment

Many sources report that the unemployment rate for people between the ages of 15 and 24 is *about double* the level for the rest of the workforce. This situation is not new. Chart 7.1 reflects 65 years of this ratio.

Chart 7.1



(Youth defined as ages 15 to 24. Before 1976, the age range that defined Youth started at age 14.)

The rates for immigrant youth are a few percentage points even higher.

According to *"Homeless Hub Youth Employment Backgrounder"*, in 2014, the youth *employment* levels based upon education level were;

- less than Grade 9 → 23.8 %
- High School → 63.7%
- Bachelor's Degree → 71.8%

Not only is youth unemployment higher, but it is more frequent, as young people are more likely than their elders to get laid off, "first in – first out" so-to-speak.

The problems for homeless youth are much worse, since they also face challenges such as not having their basic needs met, lack of social support, often low education, traumatic experiences, mental health issues and even addictions.

7.1.2 Is it really a problem?

Before we delve into causes, effects and remedies, let us first consider a dissenting opinion. An article appeared in Maclean's Magazine on November 6, 2015 that was entitled:" Why *the Youth Employment Crisis isn't what it seems".* The Federal Government would spend $1.3 billion over 4 years to create 40,000 good jobs for young people.

The author of the article believed that the investment was unnecessary because the unemployment numbers quoted misrepresented the real situation, primarily because 15-year-olds are included in the calculation, and therefore the crisis is more of a "measurement glitch". The article went on to indicate that less than 1 in 5 15-year-olds has a job, and that the unemployment rate among those in the labour force is 30%. Most people of that age are in school, (children are legally required to remain in school until the age of 18 in the Province of Ontario) and haven't yet developed the capabilities to qualify them well for the labour force. The article points out that the unemployment rates among people aged 20 to 24 are very similar to those of their elders, so that the "teens" group is swinging the measurement upward.

The recommendations of the article were to eliminate 15-year-olds from the employment and unemployment measurements, and to lower the minimum wage for workers of that age.

Ontario is worse off than the rest of Canada, and Toronto is especially problematic.

CTV ran a report from Marlene Leung a few years ago entitled *"Ontario Youth Unemployment among the worst in Canada".* While the data may not be fresh, it likely doesn't shift very quickly. She indicated that the youth unemployment rate, (15-24-year-olds), was running 16% to 17%, higher than national averages of 13.5% to 14.5%. Only half of Ontario's youth had jobs. In Toronto, unemployment for the same age group was 18%, and only 43.5% of the young population were employed.

7.1.3 Full time employment vs part time employment…

According to Statistics Canada's *"Perspectives on the Youth Labour Market in Canada, 1976 to 2015",* (released at 8:30 a.m. Eastern time in The Daily, Monday, December 5, 2016):

"From 1976 to 1978, the full-time employment rate, the percentage of the population with a full-time job, averaged 76% for men aged 17 to 24 and 58% for women in the same age group who were not in school full time. By the mid-2010s, that is from the beginning of 2014 to the third quarter of 2016, the corresponding percentages were 59% for men and 49% for women"

7.1.4 Factors Driving Youth Unemployment

We have already mentioned a couple of the reasons youth unemployment numbers seem so high. Below is a longer list of possible drivers.

a) There are measurement issues, and measurement interpretation challenges. Precision in making statistical statements is critical.

b) Young people entering the work force for the first time tend to do so during summer vacations, and typically find "entry level", low-paying jobs in which they may not learn a lot of skills useful later in life.
c) Young people and their families often don't have enough information about the labour market to make informed education and career path decisions. Young job seekers after graduation may lack labour market in formation that would help them know where to look, and what they need to get a job in the field they choose.
d) New job seekers often have received little or no training in their formal education process in;
    a. how to look for work, how to self-assess,
    b. how to target their job of choice,
    c. how to do market research,
    d. how to prepare a good résumé,
    e. how to write a good cover letter,
    f. and how to perform in a job interview, and
    g. how to develop a network of contacts

    among other job search and acquisition skills.
e) The most common challenge to youth in getting a job occurs when they look for their first one. Almost all job postings look for some kind of experience, and all too often, young people have no related experience in the job for which they are applying. Some well-prepared job seekers have managed to complete a co-op or an internship in a related field during their education, before they go looking for full time work. This particular barrier to youth is so common, the Bank of Canada's Stephen Poloz once proposed that the way to get experience is for young people to work for free until they have what they need. The suggestion was not popular, but the concepts of internship, job-shadowing and co-ops are sound, and certainly recommended routes to experience. However, people should be properly compensated, even if at a lower-than-average-rate.
f) Employers are often reluctant to hire recent graduates and other newcomers to the labour market, if they have any alternative. They presume that young people are not capable, will be unproductive, and will cost too much time and effort to manage.
g) As new entrants into the lower levels of employer firms, young people tend to get laid off before older people who have more seniority. This makes them unemployed more often, and forces them to explain to their next prospective employer why they left their previous job.
h) The economy has been shifting away from manufacturing and other goods-producing industries in the last few decades, moving more into services and knowledge work. Essential and soft skills as well as better education, are more critical in knowledge work and customer-facing functions, and there is less opportunity today even for high school graduates who have essential skills challenges.

i) The economy is also shifting to more and more "precarious" work, and truly permanent full-time work has been declining. By taking temporary and part time jobs, while young people feel good to have income and to be somewhat dependent, their employment security is lower, and prospects for solid lifetime earnings are lower as well.
j) The fact that young people are entering the workforce with more debt than they used to may not seem to be a barrier to employment, but many industries look at credit ratings, and to some degree at lifestyles when choosing among applicants.
k) Social programs to help young people find jobs certainly exist, but according to the Government of Canada's *"Strategies for a New World of Work – 13 Ways to Modernize Youth Employment in Canada",* prepared from a major study undertaken by "The Expert Panel on Youth Employment", social programs are not well coordinated among employers, educational institutions, the governments and community agencies.

7.1.5 Youth Attributes and Skills Issues

We have seen that employers commonly complain that new workforce entrants arrive at their job interviews with surprising lacks, in terms of their attitudes, experience and skills. Those common complaints relate to;

- a lack of experience, which has already been explored above,
- a lack of specific industry knowledge, which goes to experience, as already mentioned,
- a lack of judgement or wisdom,
- a lack of understanding of business principles,
- a poor "work ethic",
- a poor attitude,
- poor literacy,
- poor numeracy,
- poor preparation,
- poor emotional intelligence,
- poor communication skills, spoken, written and listening,
- inability to relate to others, share and work on teams,
- unrealistic expectations and impatience,
- poor analytical and problem-solving skills
- poor budgeting and financial management skills,
- cultural insensitivity,
- lack of initiative, self-starting and pro-activity,
- lack of concern for the long term and the big picture

Certainly, one can argue that attributes such as good judgement, good work ethic, good attitude literacy, numeracy, preparedness, language skills, team-playing and initiative can be expected to be reasonably developed in graduating students, learned from parents and from the school system.

However, employers need to be prepared for young people being a little light on wisdom, business skills, group dynamics, emotional intelligence and lack of long-term orientation. They need to move the "bar" to a realistic level, and need to learn about the realities of young jobseekers, as much as those job seekers need to learn realities of the workplace.

7.1.6 Feedback from young job seekers

Young job seekers were engaged for this project through an online survey consisting of twenty-two questions. The assistance of training and employment services partners was engaged in order to communicate with young job seekers who are either students or clients. The questions were designed to help us learn about typical education levels, employment status, job search experiences, and skills issues this group of job seekers is facing.

Youth Demographics

A substantial number of respondents were between the aged of 15 to 24 years, the rest were between 25 and 29.

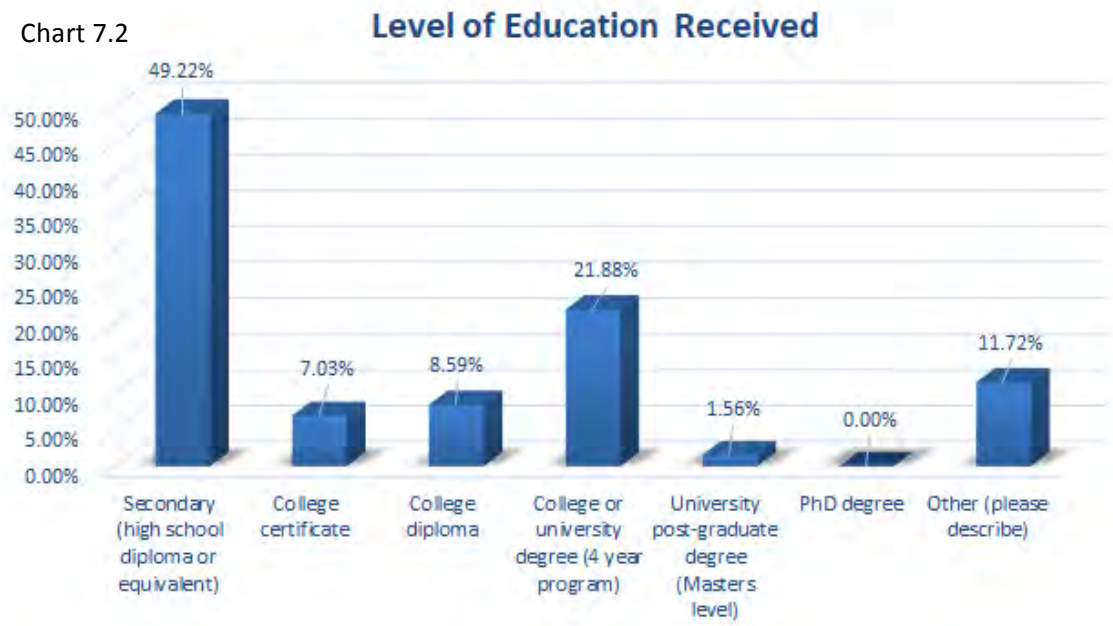
Their highest levels of education are as indicated in the chart 7.2:

86.7% of respondents received their educations from recognized Canadian institutions. 11% are foreign educated and 3 respondents self- proclaimed as other.

66% are no longer students, 34% are still in school, either full-time, part-time or some form of training outside working hours.

Those still in school are in a variety of program types including high school or high school equivalent programs, or some form of specific training program in a college, university, or private institution, or co-op programs, and the rest did not respond or responded "none".

Chart 7.2



Employed Youth

When asked if they are currently working, 63.4% of those that answered said No, 24.4% indicated part-time, 8.9% indicated they are working full-time, and 3.3% indicated they are self-employed. When asked to report their job titles, length of employment and location of their work. Below are the job titles that were submitted.

Sales mentioned 2 times
Crew member
Jericho Youth Worker
Cashier mentioned 3 times
Factory worker temp agent
Contractor
Cook mentioned 2 times
Phone Interviewer
Team Leader
Rece
VIP STAFF
Shoppers Drug Mart
Waitress
Customer Service Rep.
Security Guard
Real Estate Assistant
Real Estate Sales Professional
Recreational
Program Instructor
Busser
Product Process Specialist
Part Owner
Warehouse Associate
YMCA Employment Program
Front counter staff
Reg. Early Childhood Educator
Preschool Teacher.
Philthy Philly's

In terms of the lengths of time in the job, the responses included one at "one day", a few as little as 2 or 3 weeks, many that were between 1 and 8 months, and 8 in the range of 1 to 5 years plus. Concerning the geographic locations of their jobs, the large majority reported Newmarket. Ranking second in number was Markham, and third was Toronto. The rest included other parts of York Region. Mississauga had one mention.

When youth responded to a question that asked if they have work experience beyond that in their current employment; almost half answered that they have no work experience. The rest have experience in a wide variety of positions, including retail and sales functions, construction and trades assistance, customer service, summer camp and lifeguarding, office work in professional corporations and co-op and internship roles during school. The large number of young job seekers with no work experience puts forth quite a challenge.

Employment Goals

We asked about their employment goals, including seeking a better job than they currently have, the responses were extremely revealing.

A very large number of responses reflected ambitions in the ITC realm, and the "dream job" titles were very specific, ranging from "IT technical" or "IT-related" jobs to "Network Technician", "Software Developer", "Web Developer" and "Data Analysts". Some want to be in the Business and Financial Analysis fields, Project Management, and Electrical Engineering.

At the opposite end of the spectrum there were respondents who want to remain in sales, in entry level positions, tattoo artistry, working with / counselling children, and serving in restaurants. Then there were respondents who didn't specify a dream job. Instead they simply stated something like they want a secure, high paying job that makes use of their strengths.

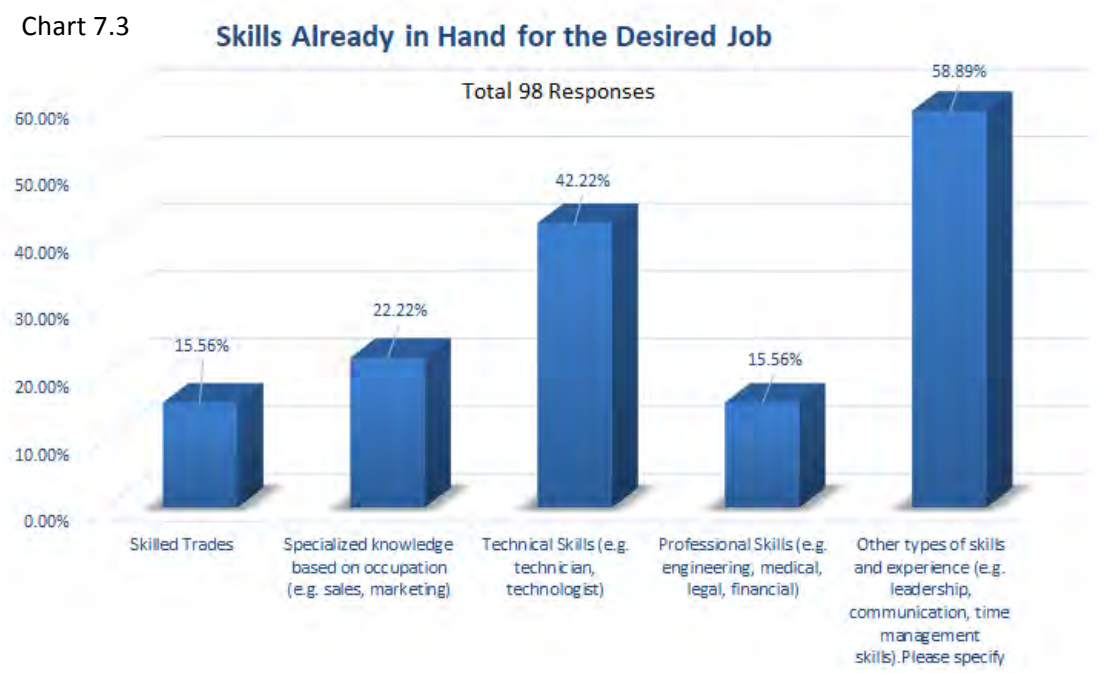
With regard to preferred location, their responses can be divided into three main types. Toronto was a very popular answer, reflecting perhaps the desires of young people to work and possibly live downtown. The GTA, and more specifically various towns within York Region, were also mentioned by many. The third category of response reflected open minds and imagination, with favoured destinations including other parts of Canada, the U.S., France and even Japan, but there were relatively few who think this far afield.

Skills

Respondents with "post-secondary qualifications" were asked to choose which of three skill categories they felt were missing from their education programs, 45.6% of those responding indicated their training lacked employability skills. 30% indicated their education excluded training of technical skills, and 24.4% claimed that no sales skills had been taught.

We asked what kinds of skills people already have, that support the kind of job they are seeking. Chart 7.3 reflects the answer pattern. Note that well over 50% of the respondents reported "Other skills" apart from the four specific choices we gave them.

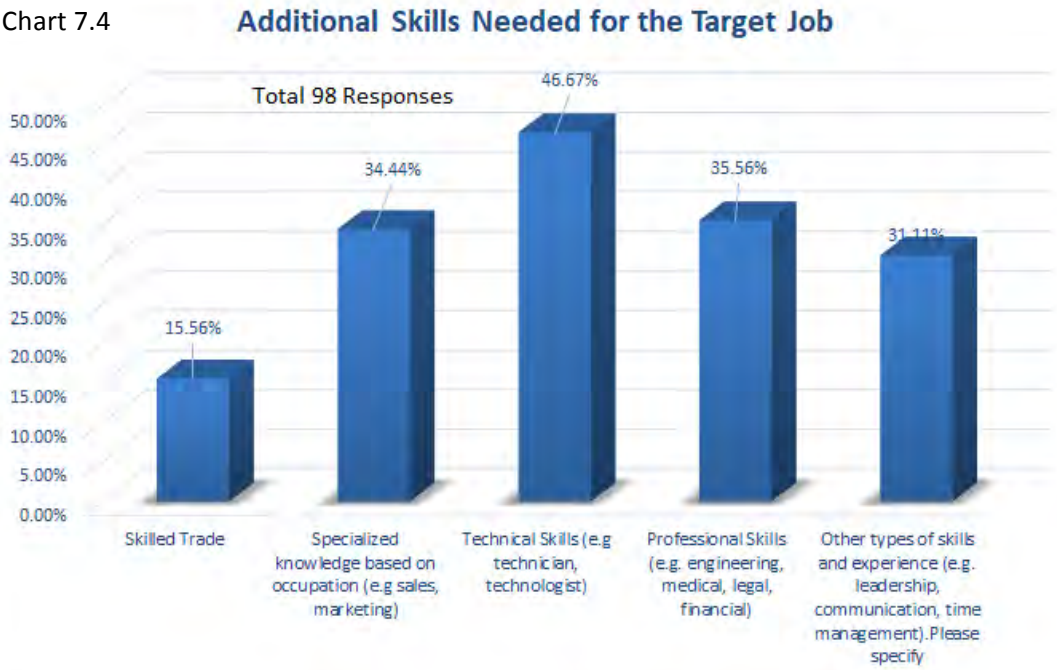
Chart 7.3



In the "Other" types of skills reported, the vast majority of responses boasted "soft" skills, including communication skills, time management, leadership, management, innovation, team player, etc. There were others that quoted specific training certifications. These people seem to be thinking in the right directions.

We also enquired about the skills responders feel they still need to get in order to land their target job. The chart 7.4 reflects their ideas.

Chart 7.4



Multiple responses were accepted from each respondent to this question. There is a full range of skills felt to be needed in addition to what job seekers already have. Strong emphasis is placed on technical skills, with specialized and professional skills not far behind. The "other" skills included communications skills, leadership skills, Smart Serve, interviewing skills, and other "soft" skills.

Job Search

We inquired of those looking for work how long their search had been underway. 14.4% declared that in fact they are not currently looking for work.

Chart 7.5 reflects the response pattern:

Chart 7.5

Most respondents have been searching for a moderate length of time. A few have been looking for more than a year. We don't know why those who are not looking, are not looking.

We asked about the specifics of their job search, beginning with how many jobs they had applied for. The answers can be classified into three ranges:

- A very large number of respondents indicated having applied for from 0 to 10 jobs, (including several having not yet applied for any jobs), so a lot of new searchers in the group.
- A smaller group reporting having applied for between 10 and 100 jobs, and
- several even reported having applied for more than a hundred positions.

A large amount of people responded as to how successful they had been in getting job interviews.

- Quite a few responses were "No" or "0";
- A somewhat larger number of answers were positive, but when the number of interviews attended was mentioned, it was typically low, in the 2 to 4 range.
- A few "outlier" reported a lot of interviews, and one even claimed "success" with every application sent out.

Again, a lot of job seekers just starting out on the long journey.

When asked how they prepared for their interviews.

- Many people admitted they hadn't prepared at all.
- The vast majority of respondents indicated they researched the employer's company in advance, without mentioning any other preparation.
- Many respondents indicated they had rehearsed role played the interview ahead of time, some with family members, some writing out answers to expected questions and studying them.
- A few of the responses were longer and more sophisticated, referring to self-awareness, strengths and weaknesses, prepared résumé, dressing well, etc.

When asked about challenges they encountered during interviews:

- Many reported "none" or 0 problems.
- Many also reported they had encountered unexpected questions, and questions to which they did not know how to respond.
- A lot of people reported having been very nervous, even fidgety during the interview.
- Several respondents indicated they had trouble discussing their experience.
- Other issues included language problems, "the wrong job for me", technical questions, and lack of interview training.

In the group, there is clearly an opportunity for more training on job search, résumé building and interviewing skills.

Many youth responded to a direct question about any skill gaps, qualification problems or experience-related barriers preventing them from getting interviews or job offers. Far and away the most popular response related to inadequate experience, far more than any other barrier reported. Some respondents indicated they are still too young.

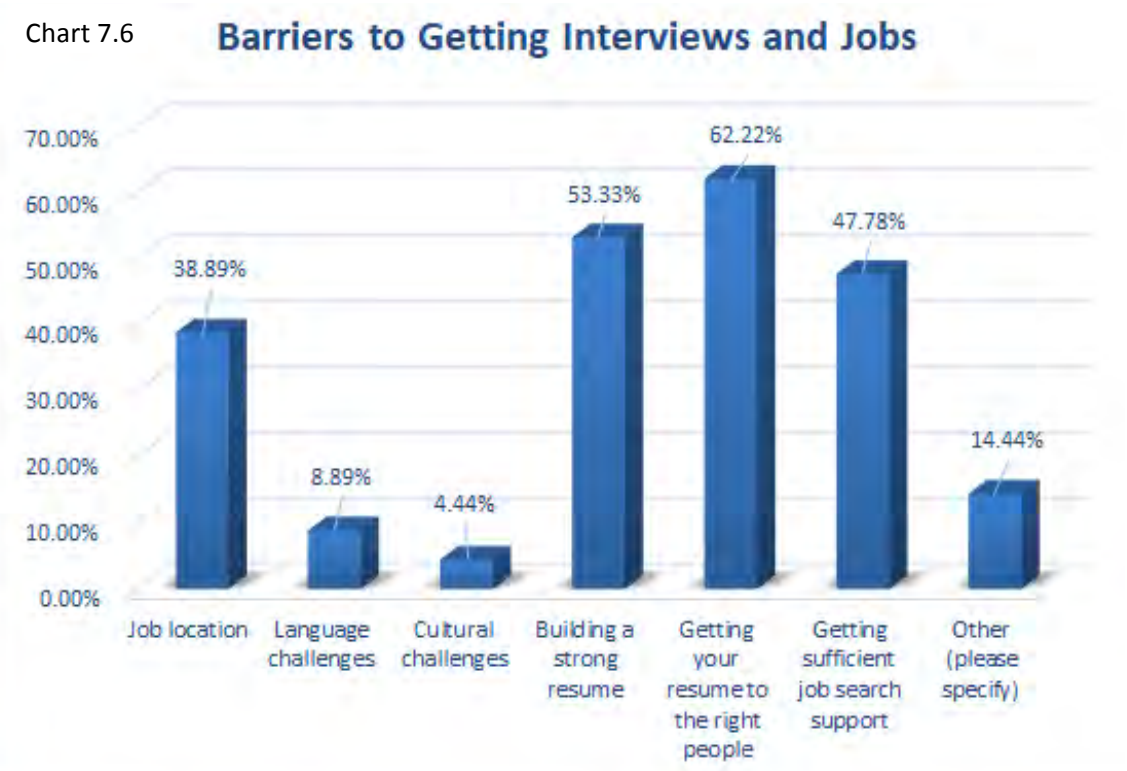
Others indicated their qualifications or certifications were inadequate. In a couple of cases, a post-secondary degree had been required, which the applicants hadn't had. One respondent has foreign credentials and no Canadian experience.

There were a couple of respondents who reported that their permanent disabilities were preventing them from getting work.

Nevertheless, the clear message from this question is EXPERIENCE!

Another question attempted to categorize the barriers to getting interviews and jobs:

Chart 7.6



Interestingly the strong response numbers are in areas of Job Search skills, and job location. The responses in the "Other" category include lack of experience, a disability, a male dominated industry, working hours, lack of an automobile, and lack of job skills or certification.

Responses related to a question about what interviewers had told them about the skills or capabilities they (the interviewee) need to obtain. Some of the popular answers included;

- No feedback was given
- More experience
- More education
- Certifications or training in specific industries or functions
- Better communication skills, speak more loudly, speak in complete sentences
- More confidence
- Body language, dress code
- Computer skills, Excel, computer science degree

A refinement of the above question asked about what *certifications* employers had asked for in interviews, that hadn't appeared in the job posting. Answers included;

- None, (the great majority of responses were None or N/A)
- CRP
- Driver's License
- Bondability
- CompTIA A+
- Bachelor's degree.
- High School / GED
- Java or Cloud certifications

We asked about situations in which the job seeker might decline a job offer. Responses included:

- Bad atmosphere or work environment
- Low pay
- Job too far away, no transportation
- A better offer
- Interference with personal life / life balance
- Not full time or not enough hours
- Schedule incompatible
- Dangerous or unhealthy working conditions
- Unfriendly management or work environment
- Hasn't happened, or wouldn't happen

Shifting gears, we asked if job seekers had worked with employment service providers in their job search, and what their experience had been like. Many responded and included:

Job Skills	Seneca
YJC	Tim Greenwood
York Works	St. Stephen's Community House (E.O.)
NPower	St. John
YMCA	RNC
Welcome Centre	Humber Employment Services

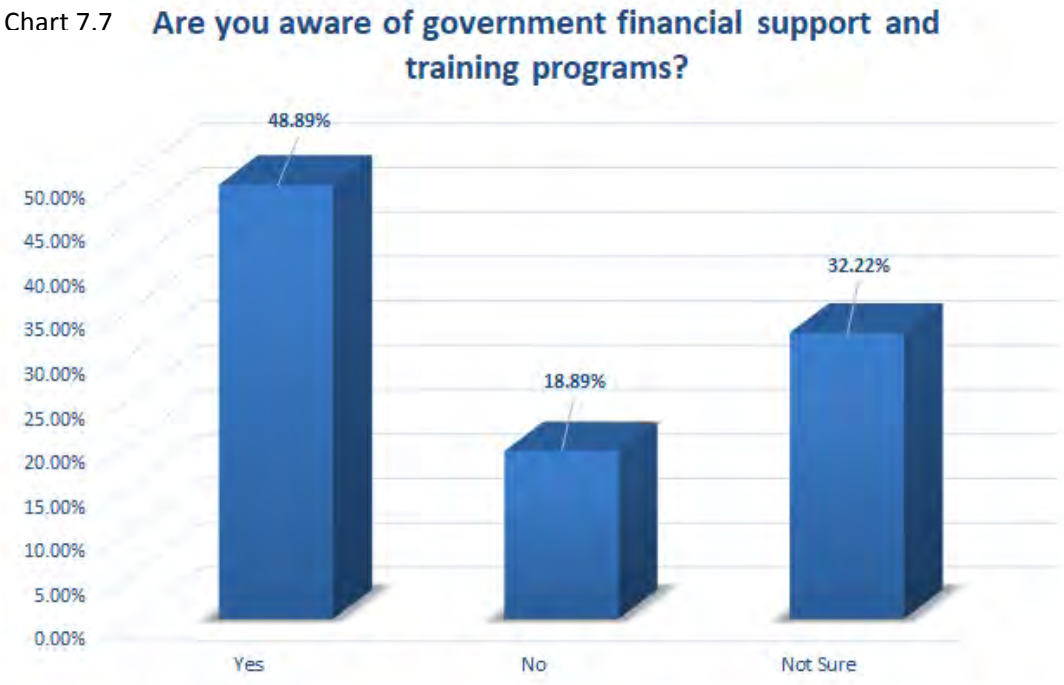
When asked about their experience with employment services, the bulk of the responses were simply "Good". Other responses were more descriptive, and quite enthusiastic, even claiming their experience had been fun! A lot of responders, for some reason said "None" or "n/a" and there were *only three or four* negative answers.

When asked about the "outcomes" of their work with the employment services agencies; assuming correct interpretation the responses, 15% got a job. However, many of the respondents are still in a program with one agency or another, and so didn't elect to predict an "outcome".

Others claimed they got a better résumé, got better networking skills, got connected with training, or got a lot of help with their job search activities. A few people simply responded "No" or "n/a", and a few responded mildly negatively.

Respondents were asked if they were asked if they were aware of government support and training programs, and their responses are reflected in chart 7.7:

Chart 7.7



The final question posed was wide open, asking what additional support respondents would value in their job search. The following list includes most of the answers:

- Job development course in High School
- More time with job search support
- Help with transportation
- More résumé, letter and interview skills help
- Mock interviews
- References

- Personal and business connections
- Financial support
- Motivation
- Help getting into an apprenticeship
- Job fairs
- Emotional support
- Information about jobs available, especially those that don't need degrees or diplomas
- More information about government supports and programs
- One on One career counselling
- Help getting an internship

In all, the survey of young job seekers has revealed the characteristics of their real issues and circumstances "at ground level", and has provided "pointers" towards areas of "gap" and opportunity for more training and improved connections to employers and the labour market.

7.2 Displaced Workers

7.2.1 Who they are…

"Displaced Workers" are typically defined as those who have been permanently separated from their employers, after many years with one firm, or in one industry. These are people who were not discharged for cause, but rather were permanently "laid off". They generally have plenty of experience, but at the same time that experience is likely to be in a sector or occupation characteristic of a declining industry.

Manufacturing around the world, and especially in Canada, has declined significantly in the last 30 years or so, with factories moving out of the country to low wage destinations, (see Section 5 of this report). As a result, many thousands of jobs have been lost, with dire consequences, especially for older Displaced Manufacturing Workers.

The summary data below has been reproduced from *"Displaced Workers in Canada: Evidence and Policy Responses"* by W. Craig Riddell of the Vancouver School of Economics at the University of British Columbia, August 2014, under the auspices of Queen's International Institute on Social Policy, Kingston, Ontario;

"Incidence of permanent job loss;

- *Permanent layoff rates for men ranged from 8%-9% in boom years 2004-7, to 13-14% in 1981-2 and 1990-92 recessions.*
- *Comparable rates for females (were) much lower: 4%-5% in good times, 5%-6% in downturns.*
- *Layoff rates (were) stable from late 70s to mid-90s, apart from cyclical movements.*
- *(There has been a) downward trend in risk of permanent layoff since the mid-1990s.*

Consequences of displacement …

Probability of re-employment in following year;

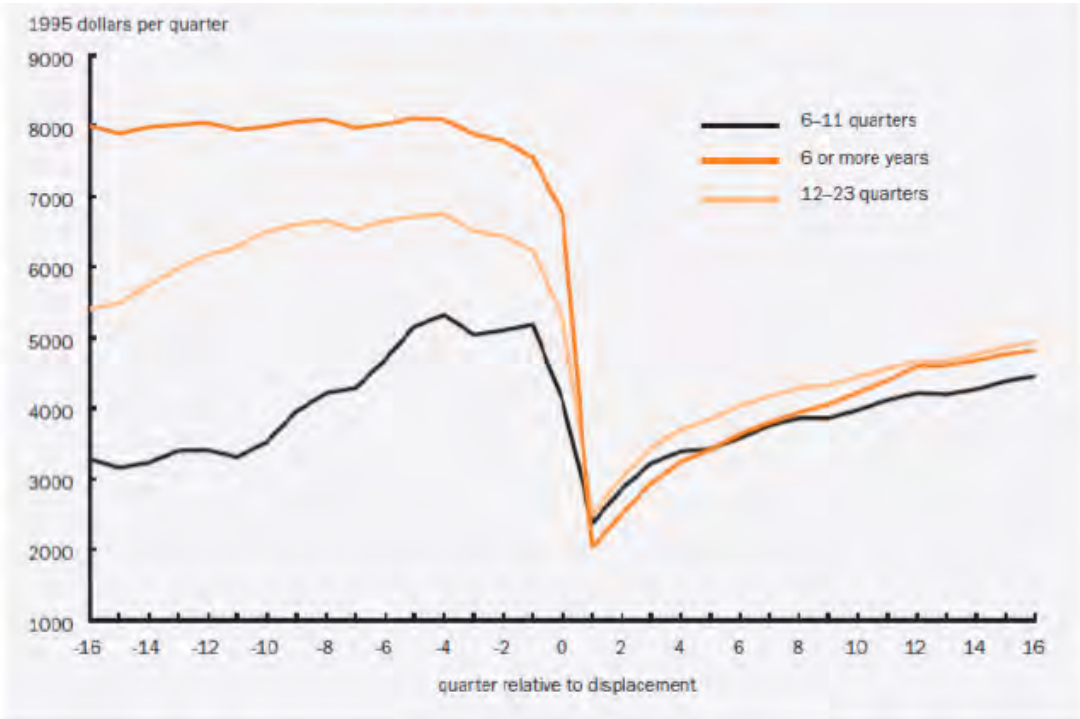
- *(was) stable over time for men (in 82--84% range), apart from cyclical fluctuations,*
- *(but) increased substantially for women from 70% in late 1970s, to >80% in mid-2000s.*

Earnings losses from displacement:

- *Average earnings losses are substantial.*
- *Losses are greatest for employees with substantial prior work attachment or long prior job tenure.*
- *Losses persist much longer than for other unemployed workers.*
- *Losses may continue after unemployment spell ends.*
- *Losses were very large: 24% of expected earnings even 5 years after displacement.*
- *Relative earnings losses of Displaced Workers began about 3 years prior to separation.*

Chart 7.8, taken as is from the same publication, reflects the seriousness and size of economic losses suffered by Displaced Workers both before and after separation from their employers, "by prior tenure" … note the *much larger losses* suffered by those who had been with their firm 6 years or more, compared with those having shorter tenure.

Chart 7.8 **Earnings of displaced workers by prior tenure**



The article goes on to detail additional consequences of displacement:

- *Displacement leads to a 15%-20% increase in death rates, (Sullivan and von Wachter 2008),*
- *(the) equivalent to a reduction in life expectancy of about 1.5 years for someone displaced at age 40.*

- *Parental job loss reduces (the) probability that 15-year-olds proceed to post-secondary education (Coelli, 2005)*
- *Children whose fathers were displaced have, as adults, lower annual earnings (about 9%) and have higher incidence of EI and social assistance (Oreopoulos, Page, and Huff Stevens, 2008)".*

Both physical and mental health are typically negatively affected. Displacement of a parent can as well cause domestic strife to the point of the break-up of a family. The probability of re-employment of a displaced worker drops rapidly with age, to the point where those in their mid-fifties or older run a real risk of never finding re-employment.

According to *"Labour-Force Participation of Older Displaced Workers in Canada - Should I Stay, or Should I Go?",* a 2011 Report from IRPP by Ross Finnie and David Gray, longer tenured older workers have often gained specific but not transferrable skills, and over time, have lost their more general and transferrable ones. At the same time, the job market for older workers is highly limited.

Quoting from the publication;

" … a surprisingly large number choose to or are forced to retire due to poor re-employment prospects. Among those aged 45 to 59 (who are not eligible for Canada Pension Plan benefits), about one-quarter have "retired" within five years, in the sense that they rely on pensions as their primary source of income. This proportion rises to nearly 70 percent in the 60 to 64 age group.

Older laid-off workers (aged 45 to 64) who manage to find new jobs lose about 40 percent of their earnings relative to what they earned in their previous jobs, significantly more than do those aged under 45. Those under 45 are much more likely to find re-employment at or above their previous earnings, and those who initially experience earnings losses typically see their earnings grow steadily thereafter. Older workers, in contrast, rarely succeed in matching their previous earnings upon re-employment, nor do their earnings grow appreciably in subsequent years."

According to OECD's *"Back to work: Re-employment, Earnings and Skill Use after Job Displacement"* by Glenda Quintini and Danielle Venn, October 2013, older workers and those with lower education are at higher displacement risk, take longer to get back to work, and suffer greater losses. While youth are also at risk, they tend to become re-employed more quickly with much lower and less persistent loss. Women are just as likely to be displaced as men, and can afterward be disconnected from the labour market more easily.

Re-employed displaced workers are more likely to work in part time and temporary jobs than they were prior to displacement. As well, job quality and management responsibility tend to decline post-displacement. These workers use fewer of their mathematical, cognitive, interpersonal and verbal skills, and typically use more "craft" and physical skills, in post-displacement work. In many cases they are ill-equipped for jobs in expanding industries. Often, they experience "professional downgrading".

7.3 Internationally Educated Workers

7.3.1 Immigration - The Big Picture

The current or impending skill gaps and labour shortages clearly demonstrate that Canada must rely heavily on immigration in order for its workforce to grow as quickly as the economy and labour market demand. This dependence is exacerbated by the fact that Canada's workforce is rapidly aging, with more people retiring and fewer young people entering, as time goes by.

According to *"How global demographic and economic trends might affect Canada's immigration program - A Report of a Metropolis Conversation held at Citizenship and Immigration Canada"* by Howard Duncan of Carleton University, *"Despite the fact that the world's population continues to increase at a rapid rate, with the expectation that the current population of 7 billion will rise to 9 to 10 billion by 2050, this population will be unevenly distributed not only with respect to geographical location but with respect to age. Fertility rates are universally declining, but the decline is now most pronounced in the developed economies of the world, most of whose fertility rates are below that of replacement, (usually considered to be 2.1 children per woman)."*

Canada's "dependency ratio", the number of working people divided by the number of seniors not working, is 5 to 1 today, but is forecast to drop to 3 to 1 by 2031.

Birth rates are slowing in developed countries, but remain rapid in developing countries. The latter have large populations of young people, and resulting labour surpluses. Up until now, emigration from a developing country to a developed one has partially addressed the issue of labour surpluses in the former, and shortages in the latter. However, things are changing in the global competition for talent. Migration patterns depend upon "push" factors in source countries, and "pull" factors in destinations. A "push" factor would be lack of local economic opportunity and inability to find work. A "pull" factor elsewhere might be lots of economic opportunity and a multitude of jobs available.

As those countries we formerly referred to as "3rd World" continue to grow their GDP's at very fast rates compared to the west, (especially GDP per capita), their standards of living are growing, as are their wages, and their economic opportunities, (e.g. in China, and India). Traditionally sources of immigrants to Canada, residents of these countries are becoming less motivated to leave, and the flows of people in certain categories are reversing, (600,000 Canadians live in China today).

The picture is similar in most "Western" countries. While today they still attract 70% of the world's immigrants, their GDP growth rates have slowed down to 2% to 3%, and their GDP per capita, which drives their standards of living, are levelling off or even declining. So those countries are just as dependent on immigration as Canada, and the competition for highly-skilled talent is increasing steadily.

7.3.2 Feedback from Employers regarding hiring Internationally Educated Professionals

The Workforce Planning Board of York Region and Bradford-West Gwillimbury, ("WPB"), since 2013, has led a group of "Employer Leadership Councils" in the exploration of local employer issues related to finding and keeping the employees they need. These Councils are made up of York Region and BWG employers from various industries, (including those three that are the focus of the current report). Also on these Councils are representatives of local Employment Service Agencies and other community labour market stakeholders. The Councils meet periodically to exchange information, ideas and experiences, and to learn about ways to improve the recruiting and employee engagement experiences of the participants.

Following is a summary of common feedback:

- Employers in York Region often struggle to find the talent they need locally and endeavour to recruit people with the needed skills from other countries. The kinds of people and skills they seek range from senior managers to highly educated technical professionals, to skilled tradespeople. However, there are also many skilled immigrants already in Canada and in the GTA, from whom they might choose.
- Employers can be reluctant to hire immigrants for a number of reasons:
    - They are uncomfortable because they anticipate language and cultural challenges.
    - They don't know how to properly assess the skills, knowledge and capabilities of internationally educated professionals during the interview process.
    - They worry about the extra effort that they feel will be involved in integrating and managing immigrants.
    - They worry about possible disruptions within their current workforces, and whether immigrants can really "fit in".
    - They fear the time and cost associated with ensuring an immigrant obtains the required accreditations to do the work in the regulated trade or profession into which they will be hired.
    - They are unconsciously biased against different ethnicities, nationalities or cultural origins.
    - They worry about attitudes, work ethics and loyalty to the firm.
- Actual experience reported by those employers who have actually hired or tried to hire skilled immigrants has been reported as follows:
    - Employers recruiting outside Canada typically connect with good overseas candidates through some channel or another, but both employers and candidates face a common enemy in the Government of Canada bureaucracy, even with "Express Entry, especially in the area obtaining favourable Labour Market Impact Assessments, ("LMIA's").
    - Employers who have hired skilled immigrants either off-shore or locally have been pleasantly surprised by the attitude, the enthusiasm, the work ethic, and the flexibility of the newcomers.

- There are indeed language challenges, many newcomers are not very proficient in understanding, speaking, reading or writing English. This is especially problematic in customer-facing jobs.
- Newcomers naturally tend to gravitate and form "communities" with people of the same origin, language, culture and religion. This happens both in the workplace and in the community. The effects of this can be to reduce the incentive to learn English.
- The language issue is critical to safety in many work environments, and poor language skills can be a safety-related reason not to hire someone
- The above notwithstanding, some employers have found work-arounds, and ways to unify and motivate their multi-cultural workforces with outstanding results.

7.3.2.1 Skilled Immigrant Experiences in Canada

Things are even more challenging for newcomers, who face difficulties getting good work in Canada. Despite doing their best to prepare for coming to /Canada before actually coming, there are always things that prove to be different from their expectations, or prove to be much more difficult than anticipated.

Five very common challenges reportedly faced by newcomers to Canada include;

- government processes and complexities of applying for temporary or permanent residence in Canada,
- establishing adequate credentials to be able to practice their chosen profession, trade or vocation, in Canada or in any given province,
- an employer's requirement for "Canadian experience",
- Language barriers, and the difficulty and cost of learning English to a proficiency level adequate to succeed in interviews, to get hired and to communicate well enough in the workplace, and
- Finding adequate welcoming and social supports to navigate all the barriers they encounter in learning how to be a Canadian and how to find work that uses their full capabilities.

7.3.2.2 "Canadian Experience"

Another barrier commonly faced by skilled immigrants, that contributes to the mismatch and over-qualification challenges, is the Canadian employer's tendency to demand "Canadian Experience". On the surface, it would seem that what "Canadian Experience" means is actual work experience in Canada, either working for a local employer, or operating a business here, likely in a job related to the position being pursued.

The problem with this requirement is that a great number of skilled immigrants have plenty of foreign experience, but no experience working in Canada.

They struggle to understand why their foreign experience is discounted, and what about Canadian experience would possibly add to their abilities to do the job.

In a number of discussions with employers, they explained that legitimate "Canadian experience" allows them to check a Canadian reference, and goes to proving, (not exhaustively), the immigrant can work here legally in the occupation in question.

Many job-seekers, however, and the employment service counsellors who try to help them, seem to want to find an "equivalent" to Canadian experience to promote to employers demanding it. This reflects a belief that Canadian experience results in capabilities that might possibly be acquired in other ways.

In an article in Canadian Social Work, entitled *""Canadian Experience," - Employment Challenges and Skilled Immigrants - A Close Look Through "Tacit Knowledge"",* by Izumi Sakamoto, Matthew Chin, and Melina Young, a deep analysis is done into the nature of what "Canadian Experience" is all about, what it equips one with, in terms of learning, codifiable and reproducible knowledge, and non-codifiable, experience-only based knowledge. The conclusion of the article is that there is an element of judgement, wisdom, and expertise that cannot be learned except through actual on-the-job experience in a Canadian environment, and that is "Tacit Knowledge". Someone needs to develop a route for new Canadians to acquire such "Tacit Knowledge" to break down this destructive and unnecessary barrier to otherwise extremely competent skilled workers finding work at their levels in Canada.

7.3.2.3 Government is addressing the immigration system

In 2017, the Federal Government of Canada made some serious in-roads into improving the immigration system in Canada. The most comprehensive announcement of the new "Global Talent Strategy" initiatives being implemented under the "Global Talent Stream", is a summary by CANADAVISA, which the reader may find in Appendix K to this report.

Essentially the government has recognized the fact that shortages of skilled labour in Management and Technical (IT) categories urgently need addressing, and that the complexities and long waiting periods that employers and immigrants have to endure for the Work Permits, Visas, and LMIA's required to bring temporary foreign workers into Canada, are causing us to lose valuable recruits and miss out on growth and development opportunities.

The "Global Talent Stream" announced on June 12th of this year introduces two categories of fast track immigration process:

"Category A

High-growth companies that can demonstrate a need to recruit unique specialized talent from abroad fall under Category A. Employers in this category must be referred to the Global Talent Stream by a designated referral partner.

Category B

Employers seeking to hire employees in certain defined categories of the National Occupation Classification (NOC) fall into Category B. These occupations are listed on the Global Talent Occupations List, which may be updated periodically to respond to labour market needs. This list was developed through collaboration between the government, labour market experts and key stakeholders."

There are of course rules applicable to each category, and advantages and disadvantages to each. Essentially, however, applications for Work Permits that qualify under either category will be handled by a new dedicated team, and will be processed within 2 weeks 80% of the time.

Under this program employers must work with Employment and Social Development Canada ("ESDC") to develop a "Labour Market Benefits Plan" as part of the qualification process.

"Under the Global Talent Stream, two new categories of workers are now exempt from the requirement to obtain a work permit. ***Highly-skilled workers in skill type 0 or skill level A*** *occupations of the NOC may enter Canada to work for 15 days in a six-month period, or for 30 days in a 12-month period, without obtaining a work permit.* ***Researchers*** *working on research projects at a publicly-funded degree-granting institution or affiliated research institution may come to Canada for 120 days in a 12-month period, without requiring a work permit."*

7.3.4 Ontario's Immigration Services for Internationally Trained Professionals

While the rules and the controls for immigration are predominantly federal in terms of jurisdiction, the provinces and territories also participate in selection of a portion of the immigrants that come to Canada each year. The Ontario Immigration Nominee Program is the main vehicle for aspiring immigrants to work directly with the province in order to secure a nomination as an applicant for permanent residence. The program's rules and requirements may differ a little from the federal program regulations, but they are in any event similar in structure, and link into the federal programs ultimately. Ontario as a province has seen relatively little use of Nominee Program compared with other provinces, such as those in the West and in Atlantic Canada.

However, Ontario's Nominee Program is only one element of a very large array of functions and services it provides to newcomers to Canada. The Province has established a comprehensive array of information, guidelines, welcoming services, training services, employment services and support of which immigrants can avail themselves from the moment they begin to investigate coming to Canada, to well after they have arrived and have been integrating into the labour market and into their communities of choice.

If one visits www.immigrationontario.ca , one can begin a very easy-to-follow, easy-to-understand pathway through a very rich information resource, covering everything from learning about Canada and Ontario, the way our society is organized, the way things work, to check lists of things to do and get done before and after arriving. There links, directories and contact information for every conceivable service or organization with which an immigrant might want to connect, and help for a wide variety of situations in which an immigrant might find him/herself.

Bridging Programs

Of particular interest in this initiative, are the educational services available to help immigrants cross the bridge between their foreign credentials and accreditations they need to work in certain professions, trades and vocations in Ontario. These training and certification programs are provided by universities, colleges and other institutions, and they are available for both regulated and non-regulated occupations.

- Following https://www.ontario.ca/page/work-your-profession-or-trade , will take one to a comprehensive guide and directory to all the Bridging Programs for regulated occupations.
- Following http://www.ontarioimmigration.ca/en/working/OI_BRIDGE_NONREGS.html will take one to a full directory of programs and institutions offering courses for non-regulated pursuits.

7.3.5 Skill Gaps and Skill Misalignments

The major "Skills" issues related to Internationally Educated Professionals have already been discussed. They revolve around accreditation, and the difficulties skilled immigrants have in obtaining Canadian accreditation for their foreign education and experience. This continuing problem drives immigrants to take on jobs well below their qualifications, thus removing availability of those jobs for young people with limited education and no experience. At the same time, overqualified immigrants are frustrated, unsatisfied, and earn too little. Their potential contributions to the economy go unrealized, and Canada's reputation as a good place to which to emigrate, suffers.

At the same time language challenges form another skills gap that remains to be overcome with and for many new Canadians

Finally, however, it is interesting to note the skills that potential skilled immigrants are told are vital to success in the ICT industry, in a 2008 ICTC publication entitled *"Developing Tomorrow's Workforce Today - A Guide for Internationally Educated Professionals to the Information and Communications Technology Sector"*

In this 9-year-old document, whose "technological" content is largely outdated, one information section on skills tells would-be ICT occupation immigrants the following:

10 Valuable Skills for Working in ICT

Having "The Package" of skills includes:

1. *Of course, Technical Skills*
2. *Interpersonal Skills (Example: Teamwork, Delegation, Supportiveness, Assertiveness)*
3. *Communication Skills (Listening, Writing, Speaking, Negotiating Skills)*
4. *Language skills*
5. *Initiative and leadership*
6. *Understanding of business processes*
7. *ICT Workplace culture knowledge*
8. *Ability to handle and pre-empt risk*
9. *Multitasking capability*
10. *Strong problem-solving and analytical skills*

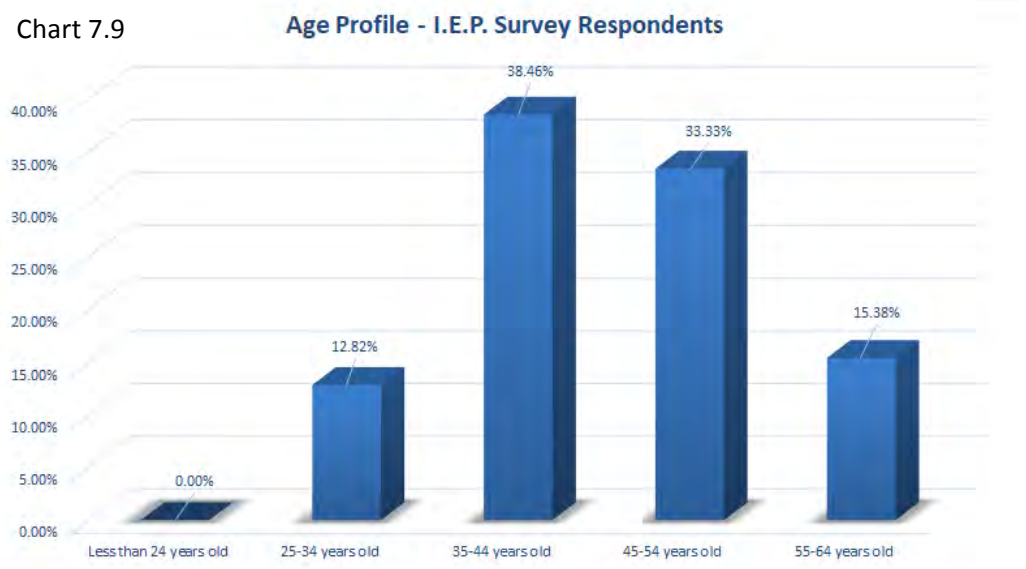
What is clear is that our society continues with the challenge of supporting the transition of newcomers into the labour market today.

7.3.6 Feedback from Internationally Educated Professionals

In order to engage with IEPs, a 17 question online survey was constructed and distributed to Welcome Centres, Employment Ontario Service providers and Bridging program students. It revealed the following concerning York Region skilled immigrants.

Chart 7.9 reflects the age profile of the respondents. Everyone was older than 25, the great majority were from 25 to 54 years old, (72%).

Chart 7.9



We asked how long respondents had lived in Canada. The profile is reflected below. 75% are reasonably recent newcomers.

Chart 7.10

When asked to identify their highest level of education achieved, the results were startling.

- *all of them* have university educations;
- some have Bachelors' degrees,
- many of them have Masters' degrees, and
- one has a PhD.

This likely indicates the respondents came to Canada under a "High Skilled Worker" economic immigrant program.

We asked where respondents had obtained their educations. The answer to this question resulted in a far-ranging variety of locations.

- China
- Sudan
- USA
- India
- Iran
- Pakistan
- Philippines
- Armenia
- Ecuador
- Italy
- Russia
- Serbia
- Switzerland
- Turkey

Some had received additional training in Canada, some in the UK, and one in "Europe".

Respondents were asked if they are currently working in the field of employment for which they were educated before arriving in Canada. Out of the people who answered this question, less than 25% responded affirmatively, majority of responses were negative. This might strongly highlight the underemployment / over qualification issue that has been discussed, *or it might instead mean that many respondents are not working at all.*

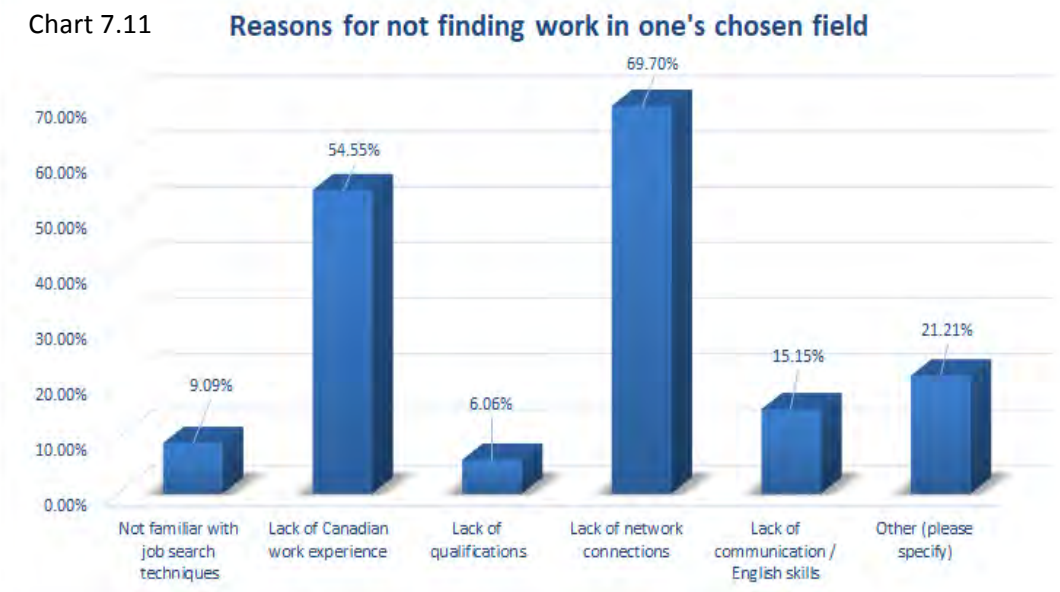
Our next question asked respondents who answered "yes" to the previous question, in which industry they are working.

- Manufacturing
- ITC
- Business, Finance or Insurance
- Educational Services

The group was asked if they had had an opportunity to gain Canadian experience through volunteering or internship. 55% answered suggesting strong efforts to overcome the "Canadian Experience" barrier.

Those who had not been successful in finding employment in their field identified what they felt prevented them from getting their target job. The response profile appears in the Chart 7.11. People were able to provide multiple answers to this question.

Chart 7.11



The answer profile is interesting, in that the reasons most often given for not finding work in the field for which the respondent was educated, was NOT related to Accreditation barriers, but instead a lack of network connections. Lack of "Canadian Experience" was indicated by 54.6% of respondents, however, this too can relate to accreditation problems.

Answers in the "Other" category varied from "employers don't know what they want and pay too little" to claimed "nepotism". It was also suggested that "job search support programs" don't help with accreditation problems as well as "The system does not help". Another didn't get hired because they had had gaps between jobs, and finally one claimed they were "overqualified".

Fifty percent of responders identified that have been forced to seek work *outside their chosen field.*

When asked how difficult it is to find a job in the GTA, majority of respondents replied that it is "difficult" or "very difficult.

Strategies to improve employment opportunities…

We asked how respondents felt they could increase their odds at finding a good job. By far the most common answer related to increasing networking, improving networking effectiveness or getting more referrals. Building better résumés and honing job-search skills also appeared, as did achieving certification. There were a few "complaints" about support services and employers.

Comments, observations and concerns about the job market…

The following is a selection of response quotes to our request for comments.

- *"From the beginning to the end of getting credentials assessed to job search techniques - all the process is difficult"*
- (Not hiring because of a) *"Lack of Canadian Experience is illegal in Ontario, yet many employers cite this as a reason when rejecting applicants."*
- *"Employers want us to know every skill before giving us the job. I found it ridiculous that it should be this way. I think if we know 5 out of 8 or 10 requirements, we should get the jobs. In my field, the technology changes every minute. I cannot spend money studying every day and not working. After I finish that training, by the time I get the job it becomes obsolete. So, employer should give us jobs and then we learn more from them."*
- *"A lot of jobs are about connections not qualifications."*
- *"I am failing to understand why even an entry level job is not offered to someone who is ready to work."*
- *"Extremely high level of discrimination of immigrants and nepotism everywhere"*
- *"Employers do not hire people without Canadian experience, and it is difficult to gain that experience even if you have strong academic reference"*

The rest of the responses typically described how hard it is to get hired and how the system and employers are both very difficult, regardless of how excellent one's credentials are.

The final question solicited "anything else" they wanted to share. A few re-iterated how Canada should be more accepting of foreign credentials, and how the government should do a better job supporting immigrants.

Our direct feedback from IEP's confirms a lot of what we learned from consulting literature on the subject of Skilled Immigrants. There is a lot of frustration out there. The sample that responded to our survey are incredibly well-educated, but can't find work here that applies and rewards their expertise. Accreditation is a major barrier. The "Canadian Experience" thing hasn't gone away, despite legislation. Discrimination, nepotism and not "having the right connections" as reported may partially be related to frustration and bitterness, but such feedback is unlikely to be baseless.

7.4 Feedback from Community Services Agencies

In order to gain further insight into the experiences of Youth, Displaced Workers and Skilled Immigrants, a consultation meeting was conducted with community agencies, including several Employment Ontario – funded Employment Service Providers, the Welcome Centre, the Literacy Council of York Simcoe, York Region District School Board, Toronto District School Board, and the Region of York Community Services. We want to learn from them, based on their direct local labour market participation, about;

- the current trends in the York Region labour market,
- skills that employers are looking for,
- the degree to which the three "challenged" groups, Youth, Displaced Workers and Skilled Immigrants, are groups they identify separately, and whether they are a large part of their clientele,
- programs configured specifically to address the needs of these jobseekers?
- the marketable skills members of these challenged groups typically "bring to the table",
- the important skills & capabilities these challenged job seekers **frequently do not have**, for which they need training in order to find work,
- other challenges and barriers that typify what clients from these groups face in finding work,
- the skills and training ***are proactively sought*** most by underemployed job seekers, or by employees who want to transition to a new position, but lack the requisite qualifications,
- the types of COJG training applications received by E. O. from employers,
- whether COJG applications received primarily to train new hires, or existing employees,
- whether Second Career Applications have been received from "displaced workers" looking for new skills, and
- any ideas they have about as-yet untried approaches to equipping these jobseekers with the skills and knowledge they are missing?

7.4.1 Labour Market Trends

- Participants reported that there are not as many people looking for work nowadays, people are getting jobs, the market for labour is tighter than last year.
- More older workers, (people on CPP, retirees), are coming to get help finding part time work,
- Newcomers to Canada and to the Region are doing their research in their home countries before immigrating. They are better prepared when they arrive than they used to be. (They mention the Canada Job Bank, but they don't mention the Express Entry Program).
- It is difficult to find applicants for entry level, manual labour jobs, especially in the northern part of the Region. One service provider has 11 openings they can't fill. It was suggested that many older workers aren't taking those kinds of jobs now, because the work is too strenuous for them

- Employers, especially Chinese employers, are making extensive use of the Canada Ontario Job Grant. People are often learning Social Media marketing skills, and "Lean Sigma" methods for manufacturing. Interestingly, much of the training being done in Chinese firms is in Mandarin, not English.

7.4.2 Challenged / Marginalized Jobseekers in York Region

- The challenged job seeker groups under discussion are of course recognized, but there doesn't seem to be a major separation of services or options for clients, simply because they happen to "fit the definition". Presumably case workers look at the entire picture for each individual client.
- However, there are definitely specialized programs in place aimed at these groups. For youth, there are Youth Job Link, Youth Job Connection, Youth Reach, and NPower to name a few.
- In the case of Displaced Workers, there are also programs, such as "Career Exploration", and Second Career for mature workers. However, there are challenges with Displaced Workers that get in the way of their fully benefitting from these programs.
- Often, such jobseekers have difficulty learning new skills that may require strong "digital" or "quantitative" abilities, or they are *unwilling* to undergo the training they need to qualify for a new career. They may even go through an entire retraining program simply to find out they don't have the soft skills employers need in that new industry. As well, having earned a high salary in the job from which they have been displaced, they strongly resist opportunities to work in which they would earn a lot less.
- One training services provider offers a wide variety of certification programs for people whose skills or knowledge don't meet today's workplace standards, (for example safety training for working at heights.
- Skilled Immigrants' biggest barrier to finding suitable work in Canada lies in the area of accreditation. Notwithstanding pre-immigration research, these job seekers often arrive in Canada and pursue accreditation through Bridging programs at various institutions, simply to find out that isn't enough to get a license. They may then struggle for years to get the qualifying experience or internship to gain final approvals from professional or industry associations. This is especially true for Doctors, Lawyers, Engineers and Accountants.
- As a result of accreditation or Canadian Experience problems, highly skilled immigrants are forced to take on jobs well below their capabilities and work for low wages. This takes entry level jobs away from lower skilled job seekers who really need them.
- Employment Services Providers are restricted from helping people in low skill jobs find work for which they are better qualified, if those Providers already helped those job seekers find work in the first place. There is an annual "10% exception limit" that forbids help being offered to such returning clients once the limit is reached.

- There are definitely skills and capabilities that people in these challenged groups bring to the labour market:
    - Young people bring excellent digital skills and acumen, they have no fear of technology and apply it enthusiastically. They work "smartly" not hard. They are innovative, curious, energetic bring new ways of thinking and of solving problems. They learn well and quickly on the job. They change the area or task on which they focus frequently, but are able to get work done effectively in each of those areas. They tend to stay "connected" almost 24/7, and can be mentally "at work" all times of the day or night.
    - Displaced workers bring loads of experience, proven loyalty, solid work ethics, and wisdom to a workplace. If we can properly assess what they need to learn and help them learn it, they can bring critical missing skills to an inexperienced work team.
    - Skilled immigrants of course bring lots of knowledge, expertise and experience. They tend to be highly motivated, and willing to do what it takes to find work in their chosen field. To the extent they are not motivated to learn English, further opportunity awaits us.

7.4.3 Skill Gaps and Other Barriers to Employment

General

- Lack of "essential soft" skills is very often a barrier for all groups. For some in the meeting, the distinction between "essential" and "soft" skills is not useful. It is better to speak about soft skills essential for employability.
- Employers do not expect to have to teach applicants essential soft skills.
- Attitude is always a critical attribute, (as opposed to being a "skill"?)

For older workers,

- Their own attitudes can be barriers. They are sometimes arrogant,
- They can be inflexible and reluctant to learn new skills and technologies.
- They can be reluctant to reinvent themselves.
- They can be harder to teach, and require old fashioned teaching methods in order to learn.
- They can be proud, and resist anything that implies a downward career move.
- They have confidence in themselves as doing what they have always done, not confident in becoming something different.
- They might bear dual responsibilities of caring for elderly parents and supporting adult children, so resist low wage alternatives.
- Employers, whether or not they would admit it, are reluctant to hire anyone over the age of 45, into any position with long term prospects or potential.

For youth,

- Experience, (the lack thereof), is a major barrier for youth. Most young people just "want a chance".
- They sometimes have a lack of adequate support, in planning their careers, learning employability skills, building their networks or finding that first job.
- One of the biggest factors for young people is often the influence of parents and how it affects what their children decide as it can sometimes have a negative effect on the outcome. There is a huge increase in anxiety among high school aged youth. (The challenges they face, the expectations placed upon them, and their perpetual connections to media, hearing about all the terrible things going on in the world, add up to a major stress burden.)
  Mental health issues may be an increasingly serious barrier.
- First generation youth often are forced to live dual existences. One in the Canadian social environment in school or at work, and a different existence at home, having to live up to the ways, value systems and expectations their parents learned in "the home country". This can be yet another anxiety driver.

For Skilled Immigrants,

- Attaining Canadian accreditation in their professions, trades or vocations are reported to be the biggest barrier.
- Employers' requirements for "Canadian Experience" are another big barrier for newcomers to Canada. (The necessity of such experience is often challenged, because it still halts the progress of so many recently arrived skilled immigrants.)
- Lack of good language skills can definitely be a barrier to finding work, since it will become obvious at the interview stage, and depending upon the employer, can be a showstopper.
- Cultural influences and differences can also cause issues in the job search process, or in the workplace, if they are not taken into account and allowed for.

7.4.4 Support and Training Programs Offered and COJG Experience

- We revisited the various programs for our challenged job seekers, offered by the agencies in the room, and although the list we made is certainly not exhaustive, it provides some starting points:
  - GTTI offers Certification Courses for job seekers, (or others), needing to "upskill" or become current
  - Computer skills, Essential Skills and Academic Upgrading programs are available, as well as general, generic personal skills courses. Self -Management is a popular selection.
  - Youth Connect, Youth Job Link, Youth Reach.
  - COSTI offers "Networks" programs for both youth and IEP's. These give those job seekers opportunities to network with a variety of C level business leaders and other high-profile individuals, giving them exposure and even contacts who may be able to help them.

  - Second Career remains available, but while it provides technical and skills training for target growth industries, it does not teach job search skills, so graduates still struggle to find work. Also, there are no guarantees one will qualify for the program.
  - "Bridging" programs are available for IEP's trying to close accreditation gaps, through a variety of educational institutions and community agencies.

- Experience with the Canada Ontario Job Grant was reviewed.
  - Popular training programs funded under the program include Social Media Marketing, Lean Six Sigma, ERP Systems training, Truck Driving, Sales Training, Leadership, Vendor-Specific training, (possibly not qualified going forward?), Executive Training, (hard to qualify going forward), and IT courses.
  - Most applications are to train existing employees, so they can be kept on, as opposed to training new employees to qualify them for their new jobs.
  - The rules are changing to "tighten up" on abuse of the program, such as no longer paying for training the employer would or should do of their own accord.

7.4.5 Suggestions for Improvements in Support and Training

Following are the excellent suggestions we received from these employment services and training professionals:

- Provide wider availability of COSTI's "Networks" program.
- Expand mentoring programs.
- Establish mechanisms to continue supporting and upskilling entry level workers whom they have helped, but who need more help to improve themselves and find meaningful work.
- Make the COJG program available for people, (as well as?) employers.
- Make programs more inclusive, less restrictive. Allow assessment of need and decision-making at the service provider case worker level to override the "rules" from time to time. Allow services to take place beyond standard working hours on a more regular basis.
- Programs are too short term, they need to extend beyond program completions and allow post-program follow ups and corrective actions. More continuity and longer client relationships would be very beneficial.
- Funding for certain programs hasn't increased in seven years. This needs review and reconsideration.
- Agencies seem to be driven to process "Quantity" instead of delivering "Quality" services with sustainable positive outcomes.
- Programs are needed to help youth who are not necessarily heavily barriered, and to help college and university graduates find places in the job market.
- Move career(guidance) counselling right out of the high schools and into the hands of better informed and more experienced employment service providers and community agencies already helping job seekers.

Validating Findings

SECTION 8

In an effort to obtain an objective "second opinion" so-to-speak", as to what was learned by the Project Team on this initiative, it was decided to engage the services of a second consultant to undertake limited parallel research into skill gaps and labour shortage in our 3 target sectors in York Region. The consultant was advised of the information that was sought, and they undertook telephone interviews or conducted surveys with employers in the local ICT industry, Manufacturing, and employers in Financial Services. We received their report on November 6th, after our own research and report preparation were almost complete. What follows is the Executive Summary of the findings of this independent enquiry.

Executive Summary of Academica Research Findings

The Workforce Planning Board of York Region and Bradford West Gwillimbury is undertaking a review of the labour market talent needs for three industry sectors in York region. This report, which summarizes the findings of one component of that larger study, was designed to consult with talent recruiters, executives, and sector experts in three sectors: Advanced Manufacturing; Financial Services; and Information and Communication Technology (ICT).

The research focuses specifically on trying to determine and understand if there is a gap between employer needs and the supply of qualified employment seekers from the employers' perspective; and to describe the skills and competencies in demand. Within this broader perspective the interviews were designed to explore the need for technology skills across three sectors.

Impact of Technology on the Workforce in York Region

Broadly, the results show that employers in all three sectors have recently hired and are planning to hire more employees in the future. The factors driving change in each sector are different and are having differential impact on the demand for skills in each. That said, the pace of technological change is, no doubt, the most significant and common driver of the need for adaptation as well as demand for ICT skills. All sectors are having to incorporate more technology in day-to-day practices to compete and meet rapidly evolving customer demand. These range widely however, from applying artificial intelligence in creating financial plans, to the use of robotics on the factory floor, to the blistering pace of development in software, mobile applications, and cybersecurity in the ICT sector. Highlights from each sector include the following.

Manufacturing: *Automation and increased use of advanced technologies comes as a response to growing competition, increased cost of production, and changing client expectations. This means workers need to be more technologically inclined and understand how to use advanced machines. It also means that the demand for lower-skilled jobs has significantly decreased. Beyond changing skill requirements, employers expressed concern for the overall lack of young skilled tradespersons entering the workforce to replace those entering retirement.*

> *Key skills/positions required: mid-level skilled trades (CNC machinists and operators, electricians, mechanical assemblers, and tool and die makers); punch press operators; general labourers, machine repair; CMM operators; designers; and quality engineers.*

Financial Services: *The emergence of financial technology (FinTech) companies into the financial services sector has disrupted a traditionally slow-moving industry. This combined with changing customer demands has created a complete shift in the skills needs. Employers require not just business and finance graduates, but graduates of STEM programs who bring the technological acumen to the sector.*

> *Key skills/positions required: STEM graduates; communication; sales skills; presentation skills; professionalism; business etiquette*

Information and Communication Technology*: As ICT companies worldwide compete to design and create new technologies, Canadian companies need to be constantly innovating as well. The need for highly skilled, adaptable workers with the most up-to-date knowledge has become a requirement for ICT companies. Companies interviewed said that they were hiring now and expect to continue hiring in the future. They did not identify a significant labour shortage, but did discuss a skills gap that has created a tight labour market and a "war for talent".*

> *Key skills/positions required: business analysts; data scientists; security experts; cloud architecture; user experience designers; software developers; soft skills.*

The above summary, and the complete report confirm the findings of our own project research in the same areas examined. The complete report in Appendix H is well prepared and well worth the read.

It mentions an excellent training initiative described as "Work-based Learning", having been operated over the last 3 years, by the Ontario Manufacturing Learning Consortium. By March of next year, they will have graduated 130 Structural Airframe Assemblers, and over 160 CNC Machinists, CNC Set Up, CNC Operators and CMM Operators. We should help York Region manufacturers connect with and participate in that program to the extent they need the occupations for which the students are being trained.

Next Steps at the Local Level

York Region

SECTION 9

Several local initiatives have been identified to help both employers and job seekers better connect.

9.1 Our "Top 4 Next Steps"

recommendations lie in local initiatives that address the following areas:

- the "essential soft skills "gaps that characterize *all* sectors,
- the opportunities we have to facilitate and accelerate IEP's finding meaningful work for which they have been educated
- support the transition of youth into the labour market
- the potential labour shortages that threaten all sectors

9.1.1 Addressing the "Essential Soft Skills" Gaps in all the Target Sectors

Our research has revealed that all three target industry sectors have "non-Technical" skill gaps, which include general business and employability skills. The specific skills on the lists we built for each sector were so similar; we concluded one list could serve all three, (see Section 6). For the purposes of the recommendations that follow, we will refer to the skills in question simply as "essential soft skills", and treat them as one group.

There is at least one training program in the area of essential soft skills being delivered in York Region by a community agency, and there are likely several others.

As a next step, more extensive research is needed into all the essential soft skills programs that are already available in or close to York Region. The subject matter taught, class sizes, program capacities, costs and delivery locations need to be understood. The experiences and future plans of providers of these programs also require understanding. The availability and the feasibility of online "self-help" course material need identifying too.

With such information in hand, *the following step* would be to explore a way of unifying, promoting and growing the delivery of "Essential Soft Skills" learning throughout the Region. Educators, service providers and employers need to be involved in order to develop jointly supported objectives for aggressively growing the learning activity taking place throughout the Region. With a clear Terms of Reference and Goals in place, strategies and action plans for promotion, expansion, quality assurance, certifications and results tracking could be worked.

9.1.2 Helping Internationally Trained Professionals

Consistent with its local labour market research and community-partner brokering mandates, the Workforce Planning Board of York Region and Bradford-West Gwillimbury should undertake a multi-pronged approach to support the connection of immigrants in the Region trying to find meaningful work, and employers trying to find talent:

- Utilizing 2016 immigrant census data, further investigation into the local population, the profiles, the employment status and the job search experiences of Skilled Immigrants in York Region.
- Partner and confer with local agencies that support skilled immigrants with employment services, accreditation and bridging programming.
- Develop activities that promote collaboration between local employer employers and skilled immigrant talent resource.

There is opportunity to close skill gaps and address labour shortages in York Region, but those opportunities can only be pursued with the investment and support of all labour force stakeholders.

9.1.3 Transitioning Youth to the Labour Market

Work with the school boards, colleges and Employment Ontario to develop a local resource that supports the transitioning to post-secondary education and the labour market.

- helping families learn about the importance of education and career planning,
- informing students and families about current labour market trends,
- identify desired attributes that employers require in new candidates
- resources to assist with job searching and networking

9.1.4 Addressing Potential Labour Shortages

We know about current labour shortages in the Region, which include entry level manufacturing workers, skilled trades, electronic designers and assemblers, software developers, mobile specialists, accountants, payroll specialists, and mid-level managers in all three sectors. The recommendations for local initiatives we have already made above will, in some measure, boost skill levels, and therefore help reduce future skilled-labour demand.

In addition, the following can be undertaken;

- In partnership with the Region of York, develop a promotion and communication plan to better inform York Region residents / local employers about all of the industries, employment opportunities and talent right here in the local labour market; this will encourage skilled job-seekers to check out employment opportunities in York Region first.
- Highlight ICT, Manufacturing and Financial Services sectors as high growth sectors within the region to address the live/work ratio in York Region and reduce the daily outflow of the skilled workforce commuting to Toronto.

9.2 Additional Local Initiatives

Addressing Technical Skills Gaps in Targeted Sectors

9.2.1 Employer Training and Lifelong Learning

Continued engagement with local employers through projects such as the Employer Leadership Councils, to help them assess their internal training needs utilizing available resources. The program would be particularly applicable and beneficial to *small and medium-sized businesses.*

9.2.2 Helping Displaced Workers

We only had an opportunity to "scratch the surface" of the Displaced Worker issues in York Region, when we spoke with the local community agencies that work with them. In order to make a difference at the local level, we need to gather a lot more information.

1. Promotion of available resources for mature workers to support their re-integration into the labour market.

2. Undertake additional research based on the 2016 Census to identify additional support resources for this labour pool.

Proposals for Government Policy Makers

SECTION 10

10.1 Skill Gaps, Labour Shortages and Under-Represented Job Seeker Challenges to Address

There are many possible avenues for government policy makers to tackle the challenges currently being faced in our target sectors and by under-represented worker groups. Our recommendations have been divided into six areas to address;

- the "essential soft skill" gaps that characterize all sectors,
- the opportunities that exist to facilitate and accelerate IEP's coming into the country and finding meaningful work for which they have been educated,
- the barriers Youth face in becoming full workforce participants,
- the potential labour shortages that threaten all sectors,
- the technical skill gaps in each target industry sector,
- the challenges Displaced Workers face in getting back to work,

Following are proposals to address each area, with suggestions for next steps at the federal and provincial levels, as well as actionable initiatives at the local (York Region) level.

10.2 Addressing the "Essential Soft Skills" Gaps in all the Target Sectors

Our research has revealed that all three target industry sectors have "non-Technical" skill gaps, which include "essential", general business and "soft" skills, and the specific skills on the lists we built for each sector were so similar, we concluded one list can serve all three, (see Section 7). For the purposes of the recommendations that follow, we will refer to the skills in question simply as "essential soft skills", and treat them as one group.

We are aware that there have been numerous efforts to list, define, codify, and provide assessment tools for essential skills, and that colleges, perhaps a few universities and many community agencies refer to and apply these standard skill definitions in assessing their students and clients, and in arranging for, or providing soft skills training.

However, it seems that essential soft skills assessments and training activities are taking place on a one-off, institution-by-institution, local and case-by-case basis. The effectiveness of these ongoing programs and their impacts on employability and employment success are not clear, and not well coordinated. We therefore have the following to suggest regarding possible government policy initiatives:

1. There needs to be a lot more awareness on the part of all parents, that a lack of essential soft skills will be a major barrier to their children's employability, and that they are in a great position to help their kids in this area throughout their youth and adolescence.

The (federal and) provincial governments are best equipped to make the public aware of this widespread employability challenge, by *investing in highly noticeable advertising online and in mainstream media.* Information should be provided about the problems, what essential soft skills are, why parents should care, and what parents can do to help. *Online help and information resources can be made available* for parents to consult, and perhaps easy-to-use skills assessment tools for home use can be devised and made available to all.

2. Current assessments and training *programs in the essential soft skills area need to be reviewed, improved in terms of design, unified and made consistent,* and incorporated into *mandatory* education programs at elementary, secondary and post-secondary levels. (Deficiencies in these skills areas should be declared as being more serious than a lack of traditional academic knowledge and technical skills). It is acknowledged that related subjects and programs already exist in schools, however their effectiveness seems to be highly questionable.

3. The special essential *soft-skill challenges faced by immigrants need to be recognized, and treated somewhat differently* from those of Canadian born residents. More soft skills training should be included into programs that prepared skilled immigrant for the Canadian labour market.

10.3 Helping Internationally Trained Professionals

The Federal Government continues to bring more high talent immigrants to Canada every year, and establishing strategies and programs such as “Global Talent Strategy” and “Global Talent Stream”.

In the meantime, prospective skilled immigrants, employers recruiting immigrants from outside Canada, and immigrants already here, continue to face serious difficulties.

1. The main challenge for immigrants already here appears to be Canadian accreditation. We therefore suggest that the federal government;
   - ensure that potential immigrants in regulated professions *are required to research and learn about all the things they will have to do to obtain licenses to practice in any given province or territory in Canada, in advance of coming* to Canada, making sure the information they need is available to them easily, in a well-coordinated form, and,

2. The main obstacle facing employers trying to recruit outside the country remains the ESDC Labour Market Impact Assessment requirements. In the new “Global Talent Stream” processes, the requirement for an LMIA has been retained, but a requirement for a “Labour Market Benefit Plan” has been added, (at least for hiring Temporary Foreign Workers).
   We propose that *the requirement for Labour Market Impact Assessments be revised* for those hiring highly skilled and professional workers whose proposed jobs are on a publicly available

list of specifically-identified occupations in high demand. We support the idea of ongoing labour market monitoring to keep this list current and firmly based on talent unavailable in Regional labour markets, to be fair to Canadian residents.

3. Employers continue to require "Canadian Experience", and to reject highly qualified applicants based on the lack of it. While it is recognized enforcement is challenging, the issue be reemphasized with employers by the provincial government to help those who have been turned away based on the requirement.

10.4 Transitioning Youth to the Labour Market

1. We propose that the federal government and Statistics Canada *revisit the age range for the youngest end of the labour force*, coordinating with the provinces. There are three potential changes they may want to consider:
   - Coordinate the definition of the Youth age group with the many countries and agencies that *consider it to be up to age 24*, not to age 29. Those over 25 are still young, but likely share far more attributes with those in their 30's than those in their teens. This will make comparisons with Youth statistics from other sources easier and more consistent.
   - At least *divide the Youth category into two for measurement,* statistics and reporting purposes. Report on those aged 15 to 19 separately from those aged 20 to 24. The characteristics of these two groups are very different in terms of their education levels, and their employment status and permanence. It is likely the two groups need different kinds of help and support.
   - *Consider the reasonableness of including 15-year-olds* in the labour force. Measure and analyze the population of 15-year-olds who are out of school and in the labour market full time. If that population is extremely low, consider excluding it, the way 14-year-olds were taken out of the range in 1976.

2. It seems that lack of "related" work experience is the biggest problem facing a large part of the Youth cohort in terms of finding work. It is acknowledged that there are multiple programs out there, supported by both the Province and the Federal level, however these initiatives are not adequately far-reaching, consistent or universally encouraged and may not enable work experience in a field or function that will later relate to the chosen field of endeavour of the young person,

   We suggest that this "experience" barrier get much greater attention, action and support:
   - Experiential learning in some form or other should be mandatory in high school, and integral to almost all post-secondary programs,
   - Youth internships in as many industries as possible should be financially supported by governments, so that there is little or no cost to employers, (any existing programs should be extended)

- Coops and internship programs should be more strongly promoted to employers by both government agencies and educators. Processes for initiating co-ops should be simplified and made less restrictive. Participating employers should be rewarded and recognized.

3. Youth and their parents are making uninformed decisions in their education and career planning, to the extent they are planning at all. Families need to be made aware of the importance of research into career, labour market and education alternatives.
   - Governments must invest in expanding the breadth and depth of labour market information, (LMI), in making it available to the public, and easy to access.
   - The importance of education and career planning needs to be more heavily promoted to everyone, and easy-to-use research and planning guides should be promoted and made available to everyone through television and online advertising containing links to free downloadable documents.

10.5 Addressing Potential Labour Shortages

- We know that Canada has an aging population, *and an aging workforce*. The older cohorts are growing fast and large numbers are expected to retire in the next decade.
- We know that a number of think-tanks, industry associations, economists and corporate executives anticipate labour shortages in a number of "Tech" areas in all our three industry target sectors across Canada.
- We also know that advancing technology is bringing rapid change to everyone's lives, their needs and desires, and their jobs. New skills and knowledge will be required for all employees in the future.
- We know that the education system needs more information about the labour market for planning purposes.
- We know that experts believe that the education system cannot possibly graduate enough skilled workers to meet the anticipated demand, especially taking retirements into account.
- We know that there are under-represented demographic groups in the labour market that have some potential for at least partially closing the "shortage gap".

None of the above is new. It is widely understood. Solutions have been put forward for many years in many different publications, communications and forums. But the collective shortage issues, *remain unsolved*.

Acknowledging that there are many capable agencies and authorities trying hard to implement solutions, we nevertheless put forward a modest recommendation related to those implementation efforts:

There are numerous agencies and departments pursuing their limited mandates in the labour market in terms of dealing with skill gaps, labour shortages, and other labour issues.

a) *Identify, simplify and unify the programs currently operating,* and eliminate duplication wherever possible. Consult the right people, acquire adequate quantities of relevant reliable data and ensure excellent communication. Unify Labour Market Information gathering methods across provinces, and expand the scope and depth of data gathered. Make it available.
b) *Infuse a culture of focus on disciplined achievement of a few initiatives at a time*, as opposed to a culture of identifying a huge list of problems, and pecking away at the list ineffectively.
c) *Establish high profile results monitoring and accountability* "enforcement" systems. Drive and reward results, not activities. Frequently update Canadians on progress made.

10.6 Technical Skill Gaps

1. Improving Labour Market - Education System Alignment

It is unrealistic to expect learning institutions to teach every single technical skill or subject identified as in demand, *there are far too many of them*, and the list changes too quickly. Instead, the team(s) should focus on the set of *foundation* courses in key technology areas.
The "program relevancy management system" should include both in class *and experiential* learning and include as many co-ops and internships as possible and manageable, in both secondary and post-secondary programs.

Recommendations *aimed specifically at colleges and universities education*:

- *review and assess current efforts* underway to correct misalignment between industry technical skills needs and current education system programs, and
- unify and accelerate the work being done, in order to modernize curricula.

Recommendations *aimed specifically at high school education* include:

- Improved programs to *ensure* basic numeracy and literacy are acquired should be established, since existing English and Math programs aren't doing the job.
- A certain level of "digital literacy" should characterize *all* high school streams. Basic computer skills, use of common applications, online research and security basics, are appropriate.
- *Promoting the benefits of STEM-based careers* should become an integral part of learning processes from the beginning of high school, and should be reinforced ongoing.
- STEM streams should be built with modern and relevant course content, but course difficulty levels should recognize student limitations, and encourage, not discourage participation.

- Investment in current co-op programs should be increased, and programs added to reach all streams in the later grades.

A coordinated investment in improving Education System - Labour Market relevancy will produce very positive results, but this initiative focuses solely on *preparing new workforce entrants* properly. We need to *work on the skills of those already in the workforce* as well.

2. Employer Training and Lifelong Learning

The literature frequently refers to the fact that Employers have substantially decreased their annual training investments since the 1990's. Our recent engagements with employers have tended to contradict that assertion, regardless of its underlying measurements. Employers readily understand the importance of training their people, and they seem to be doing so up to the level they can "afford". Smaller businesses can afford much less than can larger ones.

The province and the federal government introduced the Canada Ontario Job Grant in 2015, in order to help employers with this challenge. The program has enjoyed widespread subscription. Employers are typically enthusiastic about the program, but some maintain that the program is too limited, and application for the financial support can be difficult and discouraging. The feedback we have received prompts the following recommendations:

- The program should support internal on-the-job training, as well as training provided by outside "approved" third parties. On the job training has a very real cost. It applies to existing employees for upskilling purposes, and is even more applicable to new hires. The cost of on-the-job training will influence a hiring decision, and so deserves to be supported by the C.O.J.G. The cost assessment and integrity monitoring problems are acknowledged, but should not discourage a pilot program.
- The program should support longer term, multi-year training, without requiring yearly funding applications. Many important certifications and skills, especially advanced ones, require multi-course learning, and the reason the limitation of qualification to programs beginning and ending within one year are not understood.
- While it is recognized that introducing new restrictions to block abuses is reasonable, annual changes to the program need to include new, additional types of training and positive enhancements, as opposed to just perceived "negative" changes such as increased restrictions.

10.7 Helping Displaced Workers

We have heard both good and bad about programs such as "Second Career". They have been popular and well used. However, outcomes of the program have indicated that:

- Qualified applicants apparently have no guarantee of being accepted, or of being supported through completion of the program.

- There are no elements included in the program to fund training in job search skills, so new graduates sometimes find themselves not knowing where to begin to find work in the new discipline or industry for which they have just prepared.

Older displaced workers are often depressed, apathetic, and not motivated to "start all over again". They may have unrealistic expectations of their employability and earning potential, and resist significant downward movement in job status. It would be helpful in increasing re-employment success rates, if the Second Career program could include an introductory phase providing for counselling for older workers, to allow them to talk about their fears, aversions and concerns, and to learn about the life and career options open to them. That way they can make an enthusiastic election to undertake a second career with their eyes opened more widely.

We propose that the appropriate government department re-visit the challenges displaced workers face, and revisit the Second Career program and others like it, to rigorously measure outcomes and success rates, to analyze where and at what stage things "go wrong" for program participants, and to consider expanding the scope of the program to;

- provide clear qualification rules, and to provide applicants clear information as to what they need to do to have their acceptance throughout the program guaranteed,
- include an assessment and qualification process that includes counselling, a full review of their circumstances, and frank feedback about their career alternatives, and
- include training in labour market research, career planning, goal setting, self-assessment and strengths/weaknesses analysis, résumé preparation, getting their résumés into the right hands, and effective interview skills, and
- extend services to include job-search support after completion of re-training / upskilling.

References

1. "Labour market information: an essential part of Canada's skills agenda" Don Drummond and Cliff Halliwell The Business Council of Canada June 2016
http://thebusinesscouncil.ca/wp-content/uploads/2016/06/Labour-Market-Information-June-13.pdf

2. "Gender Diversity in STEM" CEB TalentNeuron Report
https://www.cebglobal.com/talent-management/talent-neuron/gender-diversity-stem.html

3. "CBC Cross Country Check Up"

4. Global Skills Strategy: "A gateway to growing Canada's economy and securing international talent" Published: March 18th, 2017 by Steve Proctor / Michael Walton of ICTC
http://www.itworldcanada.com/sponsored/global-skills-strategy-a-gateway-to-growing-canadas-economy-and-securing-international-talent

5. Canadian Chamber of Commerce "Canada's Skills Crisis: What We Heard"
A Canadian Chamber of Commerce report on cross-country consultations in 2012

6. Industrie 2030 March 7, 2017
"Coordinated national action on skills development essential for economic growth"
http://www.industrie2030.ca/english/news/coordinated-national-action-on-skills-development-essential-for-economic-growth.htm

7. "The skills employers are looking for"
Stacy Rapacon, special to CNBC.com December 2015
https://www.cnbc.com/2015/12/01/the-skills-employers-are-looking-for.html

8. Government of Canada launches "the Global Skills Strategy June 12 2017
https://www.workglobalcanada.com/government-of-canada-launches-the-global-skills-strategy/

9. Ontario Chamber of Commerce / Essential Skills Ontario
"MOVING FORWARD TOGETHER - An Employer Perspective on the Design of Skills Training Programs in Ontario"
http://www.occ.ca/portfolio/moving-forward-together-an-employer-perspective-on-the-design-of-skills-training-programs-in-ontario/

10. Randstad Hot Jobs 2017 – "The most in-demand careers"
https://www.randstad.ca/hot-jobs/

11. ICT: OECD Canada's Innovation Agenda (ITAC)
"Driving the Knowledge Economy and Growth in Canada"
http://itac.ca/wp-content/uploads/2016/02/ITAC-Canadas-Innovation-Agenda.pdf

12. "Diversity and the Skills Shortage in the Canadian Information and Communications Technology Sector - A Critical Interrogation of Discourse"
Ryerson University: Wendy Cukier, Margaret Yap, Mark Holmes, and Sara Rodrigues (2008)
http://www.ryerson.ca/content/dam/diversity/AODAforms/Publication/2009/Diversity%20and%20the%20Skills%20Shortage%20in%20the%20Canadian%20Information%20and%20Communications%20Technology%20Sector%20A%20Critical%20Interrogation%20of%20Discourse_2009%20AODA.pdf

13. ICT: "Where the jobs are but not the people … It may be the 'IT' industry, but attracting workers remains a challenge" By Marc Saltzman, Special to the Star Mon., March 13, 2017
https://www.thestar.com/life/coursesforcareers/2017/03/13/ict-where-the-jobs-are-but-not-the-people.html

14. ICTC – "A Guide for Internationally Educated Professionals to the Information and Communications Technology Sector" April 2008
https://www.ictc-ctic.ca/wp-content/uploads/2012/06/ICTC_IEPGuidetoICT_EN_04-08.pdf

15. JVS Toronto: Job in Demand:"the growing Information, Communications and Technology sector in Canada"
https://www.jvstoronto.org/blog/job-in-demand-the-growing-information-communications-and-technology-sector-in-canada/

16. Randstadt – "most popular IT jobs in Toronto"
https://www.randstad.ca/hot-jobs/technology-jobs/technology-jobs-in-toronto/

17. Randstadt - "Technology (Occupations) Salary Guide 2017"
https://www.randstad.ca/salary-guides/salary-guide-technologies/

18. Mentorworks: "Technical Skills Shortage May Threaten Canada's Technology Sector"
https://www.mentorworks.ca/blog/government-funding/technical-skills-shortage-canada-tech-sector/

19. Ireland: Expert Group on Future Skills Needs
"Future Requirement for High-level ICT Skills in the ICT Sector"
http://www.skillsireland.ie/media/egfsn080623_future_ict_skills.pdf

20. The Balance – "List of Information Technology (IT) Skills"
By: Allison Doyle, January 3, 2017
https://www.thebalance.com/list-of-information-technology-it-skills-2062410

21. Computerworld – "10 hottest IT skills for 2015"
By: Mary K.Pratt November18, 2014
https://www.computerworld.com/article/2844020/it-careers/10-hottest-it-skills-for-2015.html

22. Target Jobs: "Prove you've got the soft skills IT professionals need"
https://targetjobs.co.uk/career-sectors/it-and-technology/advice/285645-prove-youve-got-the-soft-skills-it-professionals-need

23. OECD "Skills for a Digital World" December 2016
http://www.oecd.org/els/emp/Skills-for-a-Digital-World.pdf

24. DISYS: "5 Important Soft Skills Needed for a Successful IT Career"
http://www.disys.com/5-important-soft-skills-needed-for-a-successful-it-career/

25. Network World: "Wanted:10 IT skills employers need today"
By: Denise Dubie 2008
https://www.networkworld.com/article/2278046/computers/wanted--10-it-skills-employers-need-today.html

26. Collins McNicholas – "What Skills Do ICT Companies Need Most?"
(Ireland) circa 2016
http://www.collinsmcnicholas.ie/what-skills-do-ict-companies-need-most/

27. Skills Panorama: "ICT Professionals, Skills, Opportunities and Challenges"
December 2016 (Europe)
http://skillspanorama.cedefop.europa.eu/en/analytical_highligths/ict-professionals-skills-opportunities-and-challenges

28. FinTech Companies in York Region
http://www.yorklink.ca/wp-content/uploads/2016/03/selection-of-financial-technology-companies-in-york-region.pdf

29. The Information and Communications Technology Council: "SKILLS IN THE DIGITAL ECONOMY WHERE CANADA STANDS AND THE WAY FORWARD" 2016
By: Asliturk, E., Cameron, A., Faisal, S. (March 2016) Ottawa
https://www.ictc-ctic.ca/wp-content/uploads/2016/05/Skills-in-the-Digital-Economy-Where-Canada-Stands-and-the-Way-Forward-.pdf

30. ICTC: "The Next Talent Wave – Navigating the Digital Shift – Outlook 2021"
https://www.ictc-ctic.ca/wp-content/uploads/2017/04/ICTC_Outlook-2021.pdf

31. "Digital Talent – The Road to 2020 and Beyond – A National Strategy to Develop Canada's Talent in a Global Digital Economy", the Information and Communications Technology Council.
http://www.ictc-ctic.ca/wp-content/uploads/2016/03/ICTC_DigitalTalent2020_ENGLISH_FINAL_March2016.pdf

32. TechToronto: "How Technology Is Changing Toronto Employment - 400,000 JOBS AND GROWING" 2016 Report
https://www1.toronto.ca/City%20Of%20Toronto/wp/business-economy/industry-sector-support/Technology/TechTO_Report2016.pdf

33. Robert Half – "2018 Salary Guide for Technology Professionals"
https://www.roberthalf.com/salary-guide/technology

34. Robert Half – "Canadian CIOs Reveal Top Barriers to Securing Tech Talent"
August 22, 2017
https://www.roberthalf.ca/en/canadian-cios-reveal-top-barriers-to-securing-tech-talent

35. Robert Half – "Canadian CIOs Reveal Hiring Plans for Second Half of 2017"
June 22, 2017
https://www.roberthalf.ca/en/research-and-insights/media-room/canadian-cios-reveal-hiring-plans-for-second-half-of-2017

36. "Combined national action on skills development essential for Economic Growth
Building a Strong and Skilled Workforce for Growth"
Industry 2030 March 7, 2017
http://www.cme-mec.ca/download.php?file=59zvsf1a9.pdf

37. Apple Rubber – "6 Valuable Skills That Will Land You a Manufacturing Career" January 15, 2016
http://www.applerubber.com/blog/6-valuable-skills-that-will-land-you-a-manufacturing-career/

38. Area Development – "The Role of Labor in Advanced Manufacturing"
Brad Lindquist, Senior Managing Director, Newmark Grubb Knight Frank (Advanced Industries2014)
http://www.areadevelopment.com/advanced-manufacturing/Advanced-Industries-2014/role-of-labor-advanced-manufacturing-29228276.shtml

39. Toronto Star: "In U.S. manufacturing, factory jobs have gone high-tech, but workers have not"
By: Dan Sewell and Christopher S. Rugaber August 15, 2017
https://www.thestar.com/business/2017/08/15/in-us-manufacturing-factory-jobs-have-gone-high-tech-but-workers-have-not.html

40. Canadian Manufacturers & Exporters – "Canadian Manufacturers Applaud Government Action to Support Advanced Manufacturing" By: Marie Morden March 2017
http://www.cme-mec.ca/?lid=JCKNC-E742G-1W6JA&comaction=show&cid=WB7JH-YNPE4-WBKHU

41. Canadian Manufacturers & Exporters (CME) & CMC – "Building a Strong and Skilled Workforce for Growth"
http://www.cme-mec.ca/download.php?file=59zvsf1a9.pdf

42. Canadian Skills Training & Employment Coalition (CSTEC) and Canadian Manufacturers & Exporters (CME): "CSTEC and CME study reveals manufacturers are expecting to grow, but a retirement driven skills shortage looms."
http://cstec.ca/en/node/28

43. Financial Post: "Looking for a new job in 2015? Advanced manufacturing is hiring"
By: Mary Teresa Bitti January 2015
http://business.financialpost.com/executive/careers/looking-for-a-new-job-in-2015-advanced-manufacturing-is-hiring

44. Goodwin College: "The Need for Skilled Manufacturers: Which Manufacturing Skills Are Employers Seeking?" By: Rob Muirhead January 17, 2017
http://www.goodwin.edu/enews/manufacturing-skills/

45. Ivey Business School – Lawrence National Centre for Policy and Management
"THE FUTURE OF CANADIAN MANUFACTURING: LEARNING FROM LEADING FIRMS"
By: PAUL BOOTHE AND RICHARD DICERNI

46. Manpower - "The Future of the Manufacturing Workforce"
By: Thomas H Davenport (2012?)

47. SoftwareAdvice.com – "Manufacturers Are Hiring Again; What Skills Are They Looking For?"
By: Justin Guinn
http://www.softwareadvice.com/resources/manufacturers-skills-in-demand/

48. Masterson Staffing – "6 Skills You Need to Be Successful in a Manufacturing Job"
By: Molly Masterson March 31, 2017
http://www.mastersonstaffing.com/blog/manufacturing-skills-needed-for-success/

49. "York Region 2016 Employment and Industry Report", Region of York Planning & Economic Development, Corporate Services Department
http://www.yorklink.ca/wp-content/uploads/2017/02/17005_employmentIndustryReport2016.pdf

50. Office of the Premier March 22, 2016
"Ontario Invests $40 Million in Advanced Manufacturing"
https://news.ontario.ca/opo/en/2016/03/ontario-invests-40-million-in-advanced-manufacturing.html

51. Ontario Manufacturing Learning Consortium (OMLC): "Ontario Manufacturing Industries Team Up To Address Critical Skills Shortage"
https://www.omlc.ca/news/8-ontario-manufacturing-industries-team-up-to-address-critical-skills-shortage

52. Randstadt's – "2017 Staffing & Salary Guide for Manufacturing and Logistics"
https://www.randstad.ca/salary-guides/salary-guide-manufacturing/

53. Randstadt Hot Jobs – "The hottest manufacturing careers in 2017"
https://www.randstad.ca/hot-jobs/manufacturing-jobs-in-demand/

54. "REGIONAL MANUFACTURING PROFILE 2016"
Toronto-York-Durham
http://www.cme-mec.ca/download.php?file=583lfyu3t.pdf

55. Industry Canada, Canadian Manufacturers & Exporters (CME) & McMaster University – "The State of Advanced Manufacturing: A Canadian Perspective"
http://www.cme-mec.ca/english/publications-reports/cme-publications-reports.html

56. "The Future of the Manufacturing Labour Force in Canada"
Canadian Manufacturers & Exporters (CME) / Canadian Skills Training and Employment Coalition (CSTEC) January 2017
http://cstec.ca/sites/cstec/files/reports/The%20Future%20of%20the%20Manufacturing%20Labour%20Force%20in%20Canada.pdf

57. Mentorworks: "These 3 Factors Will Define the Canadian Manufacturing Sector in 2016"
By: Jeff Shepherd June 30, 2016
https://www.mentorworks.ca/blog/market-trends/canadian-manufacturing-sector-trends-2016/

58. University of Toronto Institute of Technology (UOIT) -
"REPORT ON: THE FUTURE OF ADVANCED MANUFACTURING FORUM" - April 16, 2015
https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fshared.uoit.ca%2Fshared%2Fdepartment%2Fresearch%2Freport-on--the-future-of-advanced-manufacturing-forum.docx

59. Statistics Canada – "North American Industry Classification System (NAICS) Canada 2017"
http://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=307532

60. Barclay Simpson: "What skills are in demand in the financial services industry?" April 18, 2015
http://www.barclaysimpson.us/news/what-skills-are-in-demand-in-the-financial-services-industry-news-801784147

61. CBRE – GWL Realty Advisors – "Financial Services firms will need to increasingly invest in modern, collaborative workplaces in effort to hire necessary tech talent." December 18, 2016
http://www.cbre.ca/AssetLibrary/16_12_09_Financial_Services_Future.pdf

62. Price Waterhouse Coopers: "Canadian Banks 2017"
pwc.com/ca/canadianbanks

63. Deloitte – "Banking – the next generation" 2014 Survey
https://www2.deloitte.com/content/dam/Deloitte/ca/Documents/financial-services/ca-en-15-2834T-talent-studies-banking-aoda.PDF

64. "The Financial Services Industry in 2030" - by Matt Lynch, Wealth Management.com Viewpoints, October 20, 2013
http://www.wealthmanagement.com/viewpoints/financial-services-industry-2030

65. Deloitte – "The insurance industry – the next generation" 2014 Survey
https://www2.deloitte.com/content/dam/Deloitte/ca/Documents/financial-services/ca-en-15-2834T-talent-studies-insurance-aoda.PDF

66. eFinancialCareers: "The hottest new jobs for investment bankers going into FinTech"
By Paul Clarke April 7, 2017
https://news.efinancialcareers.com/uk-en/279839/investment-bankers-fintech/

67. eFinancialCareers: "These will be the seven hottest FinTech skills of 2017"
By Paul Clarke December 22, 2016
https://news.efinancialcareers.com/uk-en/269355/these-will-be-the-seven-hottest-fintech-skills-of-2017/

68. Globe and Mail - "Banks face recruitment challenges as FinTech startups snag talent"
By: Alexandra Posadzki March 25, 2017
https://beta.theglobeandmail.com/report-on-business/small-business/talent/banks-face-recruitment-challenges-as-fintech-startups-snag-talent/article28105322/?ref=http://www.theglobeandmail.com&

69. Globe and Mail – "Canada launches visa program for hiring specialized foreign talent"
By: Tracey Lindeman June 13, 2017
https://beta.theglobeandmail.com/report-on-business/small-business/talent/canada-launches-visa-program-for-specialized-foreign-talent/article35280516/?ref=http://www.theglobeandmail.com&

70. Globe and Mail – "Too many bankers? Toronto has a financial services skills surplus, report finds"
By: Rachelle Younglai August 8, 2017
https://beta.theglobeandmail.com/report-on-business/economy/torontos-job-market-oversaturated-with-bankers-report/article35911708/?ref=http://www.theglobeandmail.com&

71. "IBM Banking & Financial Services Job Skills & Competencies Framework" IBM Analytics Datasheet - → IBM Kenexa Talent Frameworks for Banking & Finance

72. Information and Communications Technology Council (ICTC) – "ICT In the Financial Services Sector - Assessing the Human Resource Needs"
https://www.ictc-ctic.ca/wp-content/uploads/2012/09/ICTC_ICT_in_FinancialService_EN_9_12.pdf

73. "Canadian Life and Health Insurance Fact Book", Canadian Life and Health Insurance Association, Canadian Life and Health Facts – 2016 Edition
https://www.clhia.ca/domino/html/clhia/CLHIA_LP4W_LND_Webstation.nsf/resources/Factbook_2/$file/2016+CLHIA+Factbook+ENG.pdf

74. "IBC Ontario – A New Road Ahead", Insurance Bureau of Canada
http://assets.ibc.ca/Documents/Facts%20Book/Industry_Updates/2017/2017-SOI-ON-EN.pdf

75. Insurance Journal – "Property Casualty Industry News"
http://www.insurancejournal.com/news/national/2017/01/27/440212.htm

76. "Invest in Canada – Financial Services Sector"
Government of Canada
http://publications.gc.ca/site/eng/458040/publication.html

77. Investment Executive – "Insurance industry in need of new talent"
By: Megan Harman May 19, 2017
http://www.investmentexecutive.com/-/insurance-industry-in-need-of-new-talent

78. Monster – "What skills are Finance employers looking for?"
https://www.monster.co.uk/career-advice/article/what-skills-are-finance-employers-looking-for

79. Phaidon International – "Canadian Financial Industry Overview 2016" December 5, 2016
https://www.phaidoninternational.com/industryinsights/canadian-financial-industry-overview-2016-71503010311640

80. Price Waterhouse Coopers (PWC) – 20th CEO Survey – Canadian Insights
"What's on the minds of Canadian CEO's"
https://www.pwc.com/ca/ceosurvey

81. Price Waterhouse Coopers (PWC) - "Gaining from Connectivity without Losing Trust"
http://www.pwc.com/gx/en/ceo-agenda/ceosurvey/2017/gx/trust.html

82. Price Waterhouse Coopers (PWC) - "MANAGING MAN AND MACHINE"
http://www.pwc.com/gx/en/ceo-agenda/ceosurvey/2017/gx/talent.html

83. Price Waterhouse Coopers (PWC) - 20th CEO Survey: "Ahead of the curve: Confronting the big talent challenges in financial services"
https://www.pwc.com/gx/en/ceo-survey/2017/industries/ceo-survey-fs-talent.pdf?logActivity=true

84. Price Waterhouse Coopers (PWC) - "Gaining an edge in the competition for talent: Inclusive recruitment in financial services" Survey 2017
https://www.pwc.com/gx/en/financial-services/publications/assets/inclusive-recruitment-survey-2017.pdf

85. Price Waterhouse Coopers (PWC) - "2017 Global Digital IQ® Survey"
https://www.pwc.com/us/en/advisory-services/digital-iq/assets/pwc-digital-iq-report.pdf

86. Price Waterhouse Coopers: "Redrawing the Lines" (based on 2017 survey)
https://www.pwc.com/gx/en/industries/financial-services/fintech-survey/report.html

87. Price Waterhouse Coopers (PWC) - News release: "Technology increases skills gap in financial services and threatens growth" February 2017
https://press.pwc.com/News-releases/technology-increases-skills-gap-in-financial-services-and-threatens-growth/s/e771eccb-14bf-4b46-bcad-0f86d0d9df6c

88. Price Waterhouse Coopers (PWC) – "State of digital talent"
https://www.pwc.com/ca/en/services/consulting/publications/digital-iq-survey-2017-state-of-digital-talent.html

89. Price Waterhouse Coopers (PWC) – "Top Issues – An Annual Report (Insurance Industry) 2016"
https://www.pwc.com/us/en/insurance/publications/top-insurance-industry-issues-2016.html

90. Price Waterhouse Coopers (PWC) – "What's your digital ROI?"
https://www.strategyand.pwc.com/media/file/Whats-your-digital-ROI.pdf

91. "Drivers of Change" – Navigating the Future, Chartered Professional Accountants of Canada
https://www.cpacanada.ca/en/business-and-accounting-resources/strategy-risk-and-governance/strategy-development-and-implementation/publications/drivers-of-change

92. "Toronto's Fintech Ecosystem" – by Elena Mesropyan, Letstalkpayments.com, January 27, 2017
https://letstalkpayments.com/torontos-fintech-ecosystem-74-companies/

93. Randstadt – "the hottest finance and accounting careers in 2017"
https://www.randstad.ca/hot-jobs/finance-accounting-jobs-in-demand/

94. Reuters: "Canada's RBC eyes Silicon Valley talent at FinTech hub"
#Technology News June 8, 2016 Matt Scuffham
https://www.reuters.com/article/us-rbc-tech/canadas-rbc-eyes-silicon-valley-talent-at-fintech-hub-iduskcn0yu1so

95. Robert Half – "2018 Salary Guide for Accounting and Finance Professionals"
https://www.roberthalf.com/salary-guide

96. Ryerson University - Ted Rogers School of Management
" Investigating the Global FinTech Talent Shortage"
http://www.ryerson.ca/content/dam/tedrogersschool/research/ResearchMattersNewsletter/Issue36/Report%201%20-%20Full_v1spreads_May17%20(DRAFT)%20(1).pdf

97. TORONTO FINANCIAL SERVICES ALLIANCE - Reports & Studies
http://www.tfsa.ca/resources/reports-studies/

98. Homeless Hub - YOUTH EMPLOYMENT Backgrounder – Statistics
http://www.homelesshub.ca/sites/default/files/B%20Youth%20Employment%20Backgrounder.pdf

99. Maclean's: " Why the youth unemployment crisis isn't what it seems." November 6, 2015
http://www.macleans.ca/work/jobs/why-the-youth-unemployment-crisis-isnt-what-it-seems/

100. Globe and Mail - LEADERSHIP LAB – By: Tyler Waye March 25, 2017
"We must prevent the scarring of long-term youth unemployment"
https://beta.theglobeandmail.com/report-on-business/careers/leadership-lab/we-must-prevent-the-scarring-of-youth-long-term-unemployment/article23452481/?ref=http://www.theglobeandmail.com&

101. National Post – Bloomberg News – July 19, 2016
"Canadian millennials still stuck in the basement as youth unemployment surges"
http://business.financialpost.com/news/economy/canadian-millennials-still-stuck-in-the-basement-as-youth-unemployment-surges

102. CTV News – Marlene Leung
"Ontario youth unemployment among the worst in Canada:"
http://www.ctvnews.ca/canada/ontario-youth-unemployment-among-the-worst-in-canada-report-1.1473423

103. Government of Canada – "STRATEGIES FOR A NEW WORLD OF WORK
13 WAYS TO MODERNIZE YOUTH EMPLOYMENT IN CANADA"
(REPORT FROM THE EXPERT PANEL ON YOUTH EMPLOYMENT) 2017
https://www.canada.ca/en/employment-social-development/corporate/youth-expert-panel/report-modern-strategies-youth-employment.html

104. Statistics Canada - The Daily, Monday, December 5, 2016
"Perspectives on the Youth Labour Market in Canada, 1976 to 2015"
http://www.statcan.gc.ca/daily-quotidien/161205/dq161205a-eng.pdf

105. Excel Spreadsheet of "Ratio of Unemployed Youth to the Rate for Older Individuals 1950 – 2015"

106. INTERIM REPORT OF THE EXPERT PANEL ON YOUTH EMPLOYMENT 2016
"Understanding the Realities Youth Employment in Canada"
https://www.canada.ca/en/employment-social-development/corporate/youth-expert-panel/interim-report.html

107. Biotalent Career Tools
"Skills Transfer and Alternate Careers"
https://www.biotalent.ca/en/transfer

108. "Displaced Workers in Canada: Evidence and Policy Responses"
By: W. Craig Riddell, Vancouver School of Economics, University of British Columbia
Queen's International Institute on Social Policy, Kingston, Ontario August 2014
http://queensu.ca/sps/sites/webpublish.queensu.ca.spswww/files/files/Events/Conferences/QIISP/2014/CraigRiddellQIISP14.pdf

109. Globe & Mail March 26, 2017
By: Tavia Grant
"Job retraining: No 'magic bullet'"
https://beta.theglobeandmail.com/report-on-business/economy/jobs/job-retraining-no-magic-bullet/article1317665/?ref=http://www.theglobeandmail.com&

110. Institute for Research on Public Policy (IRRP)
"Labour-Force Participation of Older Displaced Workers in Canada"
By: Ross Finnie and David Gray February 15, 2011
http://irpp.org/research-studies/study-no15/

111. The Organization for Economic Co-operation and Development (OECD) –
"Back to Work: Re-employment, Earnings and Skill Use after Job Displacement"
By: Glenda Quintini and Danielle Venn October 2013
http://www.oecd.org/els/emp/Backtowork-report.pdf

112. "The Skills Gap in Canada" – AED Foundation March 2016
A College of William & Mary Research Study
http://aedfoundation.org/2016/02/23/the-skills-gap-in-canada/

113. Betakit Report: "Canada faces skills gap as interest in cybersecurity jobs declines"
http://betakit.com/report-canada-faces-skills-gap-as-interest-in-cybersecurity-jobs-declines/

114. CIBC – "Education and Employability: Can We Close The Gap?" by Benjamin Tal and Royce Mendes August 2017
https://mma.prnewswire.com/media/549797/CIBC_Education_and_employability__Can_the_gap_be_closed___CIBC_r.pdf

115. "A Looming Skills Gap Threatens Ontario's Future" - The Conference Board of Canada
http://www.conferenceboard.ca/infographics/skills-gap-info.aspx

116. "How to successfully close the skills gap"
The Globe and Mail Inc. Leadership Lab by Sarah Franklin April 13, 2017
https://beta.theglobeandmail.com/report-on-business/careers/leadership-lab/how-to-successfully-close-the-skills-gap/article33213567/?ref=http://www.theglobeandmail.com&

117. Hays – "WHAT PEOPLE WANT - 5 WAYS TO ATTRACT AND RETAIN TOP TALENT"
– Presentation & Paper

118. Maclean's – "The myths about Canada's skills gap" By: Chris Sorensen September 30, 2014
http://www.macleans.ca/work/jobs/the-myths-about-canadas-skills-gap/

119. NATIONAL POST – By: Josh McConnell May 3, 2017
"Toronto sees 19% boost in hiring but still has a skills gap problem"
http://business.financialpost.com/technology/toronto-hiring-is-up-19-but-city-has-skills-gap-problem-says-linkedin-canadas-first-workforce-report

120. "The Cost of Ontario's Skills Gap"
The Conference Board of Canada June 2013
http://www.conferenceboard.ca/e-library/abstract.aspx?did=5563

121. "Attracting the Talent Canada Needs through Immigration" Advisory Council on Economic Growth
https://www.budget.gc.ca/aceg-ccce/pdf/immigration-eng.pdf

122. Bio Talent Canada – "The Case for Hiring Internationally Educated Professional"
https://www.biotalent.ca/en/article/case-hiring-internationally-educated-professionals

123. Calgary Herald – "Skilled immigrants wasting their talents in Canada"
http://calgaryherald.com/storyline/skilled-immigrants-wasting-their-talents-in-canada

124. "Canadian Experience," Employment Challenges, and Skilled Immigrants
A Close Look Through "Tacit Knowledge"
By: Izumi Sakamoto, Matthew Chin, & Melina Young
http://www.beyondcanadianexperience.com/sites/default/files/csw-sakamoto.pdf

125. Globe and Mail "Increasing immigration won't fix Canada's growth challenge"
By: Tony Keller March 24, 2007
https://beta.theglobeandmail.com/opinion/increasing-immigration-wont-fix-canadas-growth-challenge/article32463961/?ref=http://www.theglobeandmail.com&

126. Govt of Canada "Express Entry – Who Can Apply" – Skilled Immigrants
http://www.cic.gc.ca/english/immigrate/skilled/apply-who-express.asp

127. "How global demographic and economic trends might affect Canada's immigration program" - A Report of a Metropolis Conversation held at Citizenship and Immigration Canada
By: Howard Duncan Carleton University December 17,2012
http://www.cic.gc.ca/english/resources/research/global-trends.asp

128. OECD – "Recruiting for success - Challenges for Canada's Labour Migration System"
http://www.oecd.org/els/mig/recruiting-for-success-Canada.pdf

129. Ontario Immigration – "Services for Internationally Trained Professionals"
http://www.ontarioimmigration.ca

130. Settlement.Org "How can I come to Canada as a skilled worker?"
https://settlement.org/ontario/immigration-citizenship/immigrating-to-ontario/immigration-categories/how-can-i-come-to-canada-as-a-skilled-worker/

131. Times of India – "Why 'Express Entry' makes sense for immigrants, employers and Canada"
http://timesofindia.indiatimes.com/new-to-canada/immigration-citizenship/Why-Express-Entry-makes-sense-for-immigrants-employers-and-Canada/new_canada_show/48341140.cms

132. ICTC: "Developing Tomorrow's Workforce Today - A Guide for Internationally Educated Professionals to the Information and Communications Technology Sector"
https://www.ictc-ctic.ca/wp-content/uploads/2012/06/ICTC_IEPGuidetoICT_EN_04-08.pdf

133. LINK TO CALGARY HERALD – "WORKERS WITHOUT BORDERS"
http://calgaryherald.com/tag/workers-without-borders

134. Betakit – "Government unveils Global Skills Strategy with fast-track visa process"
By: Jessica Galang – Canadian Startup News and Tech Innovation November 1, 2016
https://betakit.com/government-unveils-global-skills-strategy-with-fast-track-visa-process/

135. CIC News: "Global Talent Stream Releases Occupations List and Further Details" – June 12, 2017
https://www.cicnews.com/2017/06/global-talent-stream-releases-occupations-list-and-further-details-069229.html#gs.fGwFfoY

136. "Canada Visa: - Global Talent Stream"
https://www.canadavisa.com/global-talent-stream.html

Appendix A

NAICS CODES COMPRISING THE "ICT" SECTOR

334110	Computer and peripheral equipment manufacturing
334210	Telephone apparatus manufacturing
334220	Radio and television broadcasting and wireless communications equipment manufacturing
334290	Other communications equipment manufacturing
334310	Audio and video equipment manufacturing
334410	Semiconductor and other electronic component manufacturing
334610	Manufacturing and reproducing magnetic and optical media
417310	Computer, computer peripheral and pre-packaged software merchant wholesalers
417320	Electronic components, navigational and communications equipment and supplies merchant wholesalers
511211	Software publishers (except video game publishers)
511212	Video game publishers
517111	Wired telecommunications carriers (except cable)
517112	Cable and other program distribution
517210	Wireless telecommunications carriers (except satellite)
517410	Satellite telecommunications
517910	Other telecommunications
518210	Data processing, hosting, and related services
541514	Computer systems design and related services (except video game design and development)
541515	Video game design and development services
811210	Electronic and precision equipment repair and maintenance

Appendix B

ICT National Occupation Category Codes (per ICTC)

0131 Telecommunication carriers managers

0211 Engineering managers

0213 Computer and information systems managers

0911 Manufacturing managers

1252 Health information management occupations

2133 Electrical and electronics engineers

2147 Computer engineers (except software engineers and designers)

2171 Information systems analysts and consultants

2172 Database analysts and data administrators

2173 Software engineers and designers

2174 Computer programmers and interactive media developers

2175 Web designers and developers

2241 Electrical and electronics engineering technologists and technicians

2242 Electronic service technicians (household and business equipment)

2243 Industrial instrument technicians and mechanics

2281 Computer network technicians

2282 User support technicians

2283 Information systems testing technicians

5222 Film and video camera operators

5223 Graphic arts technicians

5225 Audio and video recording technicians

5241 Graphic designers and illustrators

6221 Technical sales specialists - wholesale trade

9222 Supervisors, electronics manufacturing

9523 Electronics assemblers, fabricators, inspectors and testers

Appendix C

ICTC "SKILLS IN THE DIGITAL ECONOMY - WHERE CANADA STANDS AND THE WAY FORWARD"

Foundational skills

- Basic Numeracy
- Basic Literacy (reading and writing)
- Document use

Business and Interpersonal skills

Communication skills:

- Active listening and clear verbal communication
- Effective writing

Interpersonal / social skills:

- Relationship building and ability to relate to others
- Mitigating conflicts
- Inspiring and developing others

Creativity / innovation skills:

- Elaborating, identifying problems and potential solutions, refining, analyzing and evaluating one's own ideas
- Being open to new perspectives, seeking different points of view
- Ability to develop original/worthwhile ideas using brainstorming and other techniques
- Experimenting ideas, assessing and taking risks, tolerating ambiguity and keeping focus for the goals

Sales / marketing skills:

- Dedication to customer service and effective relationships building
- Knowledge of market
- Effective listening and writing, storytelling and trust building
- Understanding digital or social media marketing
- Ability to understand business analytics and customer segmentation reports

Business perspective:

- Understanding business goals and strategy
- Integrating business goals in everyday activities

Management skills:

- Inspiring and motivating others
- Demonstrating professional integrity and honesty
- Analyzing problems and solving issues
- Driving the team for results, developing others

- Communicating, collaborating and promoting teamwork
- Displaying technical and professional expertise as well as a strategic perspective36

Continuous learning:

- Gathering information and identifying one's learning and developmental needs
- Continually acquiring new knowledge to improve job performance
- Strategically planning and undertaking new content and learning activities targeted to specific developmental needs

Digital and Technical skills

- **Computer/ ICT literacy:**
- Computer and technical skills including basic interaction with computers
- Configuring computer and software options
- Troubleshooting, problem solving
- Setting up a Wi-Fi network, solving network problems, connecting devices and sharing files, printing documents and other traditional computer skills

Using office productivity software:

- Successful interaction with key office programs (e.g., using the e-mail processor)
- Using features of key software interface (e.g., writing and formatting a Word document or entering data to Excel)
- Configuring software options or using advanced features for more complex operations (e.g., using formulas in Excel, formatting or editing for visual effects)
- Other productivity skills including basic photo and video editing, converting file formats, blogging, online banking and others

Using SMAAC technologies:

- Understanding Social media, Mobile technologies, Apps, basic Analytics and Cloud technologies or internet –based systems
- Using social media platforms for outreach
- Using mobile devices, apps and cloud systems for productivity

Using sector or enterprise-specific programs:

- Using sector or enterprise-specific programs (e.g., HRM, CRM and/or business specific apps)
- Using specific programs across different platforms (desktop applications, internet-based or mobile apps)

Digital communication and project collaboration:

- Working with multiple team members working remotely and using digital interfaces
- Managing projects online, understanding digital collaboration opportunities
- Effectively exercising traditional business competencies using digital tools (e.g., working on the same cloud document, interacting through web communication platforms)

Working with IIoT technologies (Industrial Internet of Things):

- Working with automated manufacturing technologies
- Ability to work with smart sensors, remote monitoring systems and digital interfaces

Informational skills

Digital information processing skills:

- High level digital literacy and information-processing skills
- Defining information needs, accessing, assessing, organizing, integrating, applying, creating and
- communicating information
- Search and research capability, effectively using research tools

Data literacy and intermediate data analytics:

- Understanding structure of data and data presentations
- Transforming data and preparing for analysis
- Conducting basic data analytics (e.g., descriptive statistics)
- **Information security and privacy (cybersecurity):**
- Ensuring cybersecurity while effectively using pervasive digital systems
- Password protection and understanding cloud system security

Attention management:

- Managing information load from multiple devices
- Identifying priorities
- Managing time required to process information

Entrepreneurial Skills

Digital Entrepreneurship

- Excellent business knowledge of SMAAC technologies (Social, Mobile, Apps, Analytics Cloud)
- Ability of spotting new trends quickly
- Investment skills
- Sales, marketing, and business development
- Bring new products and services to market
- Networking and finding the right digital talent for the right positions
- Leadership and ability to manage multidisciplinary teams

Digital skills are important for the prosperity of every economy to compete in a globally hyper-connected world. Digital skills, entrepreneurial skills and other complementary skills are the foundations of any economic productivity and there is an increasing need for digitally skilled workforce for technological adoption and innovation. Although it is known what skills are critical for the digital economy, there is evidence that Canadian workforce lacks the digital skills required for a productive economy.

Appendix D

NAICS Codes for the Manufacturing Sector

North American Industry Classification System - Manufacturing	
311	Food manufacturing
312	Beverage and tobacco product manufacturing
313	Textile mills
314	Textile product mills
315	Clothing manufacturing
316	Leather and allied product manufacturing
321	Wood product manufacturing
322	Paper manufacturing
323	Printing and related support activities
324	Petroleum and coal product manufacturing
325	Chemical manufacturing
326	Plastics and rubber products manufacturing
327	Non-metallic mineral product manufacturing
331	Primary metal manufacturing
332	Fabricated metal product manufacturing
333	Machinery manufacturing
334	Computer and electronic product manufacturing
335	Electrical equipment, appliance and component manufacturing
336	Transportation equipment manufacturing
337	Furniture and related product manufacturing
339	Miscellaneous manufacturing

Appendix E

NOC Codes for Manufacturing Occupations

091	Managers in manufacturing and utilities
723	Machining, metal forming and erecting trades
738	Printing press operators and other trades and related occupations n.e.c.
745	Longshore workers and material handlers
921	Supervisors, processing and manufacturing occupations
922	Supervisors, assembly and fabrication
923	Central control and process operators in processing and manufacturing
924	Utilities equipment operators and controllers
941	Machine operators and related workers in mineral and metal products processing and manufacturing
942	Machine operators and related workers in chemical, plastic and rubber processing
943	Machine operators and related workers in pulp and paper production and wood processing and manufacturing
944	Machine operators and related workers in textile, fabric, fur and leather products processing and manufacturing
946	Machine operators and related workers in food, beverage and associated products processing
947	Printing equipment operators and related occupations
952	Mechanical, electrical and electronics assemblers
953	Other assembly and related occupations
961	Labourers in processing, manufacturing and utilities

Appendix F

NOC Codes for Financial Services

0013	Senior managers - financial, communications and other business services
0111	Financial managers
0121	Insurance, real estate and financial brokerage managers
0122	Banking, credit and other investment managers
1111	Financial auditors and accountants
1112	Financial and investment analysts
1113	Securities agents, investment dealers and brokers
1114	Other financial officers
1212	Supervisors, finance and insurance office workers
1311	Accounting technicians and bookkeepers
1312	Insurance adjusters and claims examiners
1313	Insurance underwriters
1314	Assessors, valuators and appraisers
1315	Customs, ship and other brokers
1431	Accounting and related clerks
1432	Payroll clerks
1434	Banking, insurance and other financial clerks
1435	Collectors
6231	Insurance agents and brokers
6235	Financial sales representatives

Appendix G

Financial Services

Extracted from **"Hiring at a Glance" from the "Robert Half Salary Guide 2018"**

IN-DEMAND SKILLS

- Advanced Excel expertise
- General knowledge of enterprise resource planning (ERP) systems, especially SAP, Oracle and Microsoft Dynamics GP
- Knowledge of cloud-based systems, like NetSuite and Workday
- Experience with data analytics and database management software, especially SQL
- Proficiency in Hyperion, for financial analyst positions
- QuickBooks expertise, in small and midsize businesses
- Strong communication skills
- Industry-specific experience
- Leadership abilities
- Adaptability and flexibility
- Ability to collaborate with multiple departments
- Multilingualism

IN-DEMAND CREDENTIALS

- CAMS (Certified Anti-Money Laundering Specialist)
- CCP (Certified Credit Professional)
- CFA (Chartered Financial Analyst)
- CGMA (Chartered Global Management Accountant)
- CIA (Certified Internal Auditor)
- CISA (Certified Information Systems Auditor)
- CPA (Chartered Professional Accountant)
- CPA, CA (Chartered Professional Accountant, Chartered Accountant)
- CPA, CMA (Chartered Professional Accountant, Certified Management Accountant)
- CPA, CGA (Chartered Professional Accountant, Certified General Accountant)
- CPM (Certified Payroll Manager)
- CPP (Certified Payroll Professional)
- PCP (Payroll Compliance Practitioner)

Appendix H

academica group

Workforce Planning Board of York Region & Bradford West Gwillimbury

Examining Employer Labour Market Needs for Talent in ICT, Financial Services & Advanced Manufacturing

November 6, 2017

PREPARED BY:
Academica Group Inc.,
London, ON

TABLE OF CONTENTS

Executive Summary

The Workforce Planning Board of York Region and Bradford West Gwillimbury is undertaking a review of the labour market talent needs for three industry sectors in York region. This report, which summarizes the findings of one component of that larger study, was designed to consult with talent recruiters, executives, and sector experts in three sectors: Advanced Manufacturing; Financial Services; and Information and Communication Technology (ICT).

The research focuses specifically on trying to determine and understand if there is a gap between employer needs and the supply of qualified employment seekers from the employers' perspective; and to describe the skills and competencies in demand. Within this broader perspective the interviews were designed to explore the need for technology skills across three sectors.

Impact of Technology on the Workforce in York Region

Broadly, the results show that employers in all three sectors have recently hired and are planning to hire more employees in the future. The factors driving change in each sector are different and are having differential impact on the demand for skills in each. That said, the pace of technological change is, no doubt, the most significant and common driver of the need for adaptation as well as demand for ICT skills. All sectors have to incorporate more technology in day-to-day practices to compete and meet rapidly evolving customer demand. These range widely however, from applying artificial intelligence in creating financial plans, to the use of robotics on the factory floor, to the blistering pace of development in software, mobile applications, and cybersecurity in the ICT sector. Highlights from each sector include the following.

Manufacturing: Automation and increased use of advanced technologies comes as a response to growing competition, increased cost of production, and changing client expectations. This means workers need to be more technologically inclined and understand how to use advanced machines. It also means that the demand for lower-skilled jobs has significantly decreased. Beyond changing skill requirements, employers expressed concern for the overall lack of young skilled tradespersons entering the workforce to replace those entering retirement.

Key skills/positions required: mid-level skilled trades (CNC machinists and operators, electricians, mechanical assemblers, and tool and die makers); punch press operators; general labourers, machine repair; CMM operators; designers; and quality engineers.

Financial Services: The emergence of financial technology (FinTech) companies into the financial services sector has disrupted a traditionally slow-moving industry. This combined with changing customer demands has created a complete shift in the skills needs. Employers require not just business and finance graduates, but graduates of STEM programs who bring the technological acumen to the sector.

Key skills/positions required: STEM graduates; communication; sales skills; presentation skills; professionalism; business etiquette

Information and Communication Technology: As ICT companies worldwide compete to design and create new technologies, Canadian companies need to be constantly innovating as well. The need for highly skilled, adaptable workers with the most up-to-date knowledge has become a requirement for ICT companies. Companies interviewed said that they were hiring now and expect to continue hiring in the future. They did not identify a significant labour shortage, but did discuss a skills gap that has created a tight labour market and a "war for talent".

Key skills/positions required: business analysts; data scientists; security experts; cloud architecture; user experience designers; software developers; soft skills.

Introduction

The Workforce Planning Board of York Region and Bradford West Gwillimbury (WPB) is a community-based organization that provides support local businesses by engaging the community in local labour market research and planning.

The WPB is undertaking a review of the labour market needs for Information and Communications Technology (ICT) talent in York region. This study is designed to consult with talent recruiters, executives, and sector experts in three sectors:

1) Advanced Manufacturing
2) Financial Services
3) Information and Communications Technology

The research focuses specifically on trying to determine and understand if there is a gap between employer needs and the supply of qualified employment seekers from the employers' perspective; and to describe the skills and competencies in demand. This report presents a summary of the findings of employer interviews conducted by Academica Group on behalf of the WPB.

Methodology

The method of data collection used was qualitative interviews and surveys. The WPB and Academica Group created a discussion guide that was used for the interviews. Academica Group was to conduct 20 telephone interviews with employers from the selected sectors in the York region. It was the preference that the employers were from large companies and that there was a balanced representation across the three sectors.

Sampling

WPB supplied a list of over 100 employers representing the sectors. In total, 105 companies were contacted with two or more follow-up contacts.

Telephone interviews were conducted with 12 companies, while surveys were distributed to 10 companies with 5 returned. Academica also supplemented using interviews conducted as part of a separate Sector Partnership Project Grant Seneca labour market study under the auspices of Seneca College where applicable.

The results reported here are based on a total of 20 interviews or surveys completed from all three sectors: Financial Services (7); Information and Communications Technology (7); and Manufacturing (6). These included employers in the York region and some industry representatives that gave a broad perspective of the skills gaps and training needs in each sector.

Instruments

The interview guide, designed in collaboration with the WPB was organized into the following sections:

Section A: Sector Trends and Changes

Section B: Human Resources

Section C: Labour Market, Skills Needs and Recruitment

Section D: Retention

Section E: Employee Training

Telephone interviews took on average 30 minutes to complete.

Summary of Findings

Employers and representatives from three sectors were interviewed. The results are presented here in aggregate with general trends discussed first, followed by sector-specific themes.

Interviewees in all three sectors described change happening at a rapid pace, with technology being one of the driving factors. This manifested in different ways: in manufacturing, for example, technological change manifested in changing production methods; in finance, technological change is driving some changes in internal processes but also consumer demand on the market side; finally, in the information and communications technology (ICT) industry, technological change necessarily impacts all aspects of the sector.

The common thread linking all three sectors in terms of skills demand is that the skills required for any given job are shifting considerably with advancements in technology. In many cases, new technology is eliminating the need for some entry-level skill sets and increasing demand for workers with mid- to higher-level skills as well as workers with the soft skills necessary to interpret technological outputs and communicate them to coworkers and consumers.

The general consensus regarding new graduates was that they are very often highly skilled technically, and are intimately familiar with technology and how it impacts our everyday lives. Despite this, interviewees said that they tend to lack soft skills such as the ability to communicate, act professionally, and follow business etiquette.

Across all sectors, interviewees reported valuing training, especially for new employees, although only four of the stakeholders interviewed had knowledge of financial supports and free employment services that are available to assist with recruiting and training needs.

Manufacturing

Sector Trends

Interviewees from the manufacturing sector all agreed that the industry is changing at a rapid pace. While the external view is that manufacturing is in a decline, interviewees stated that those companies adapting to the shifts in the industry are actually growing, particularly in the sub-sectors of aerospace, automotive, tool and die, and nuclear. Key industry-wide factors contributing to change in the manufacturing sector include:

1. Growing competition locally and globally
2. Rise of minimum wage and the cost of production
3. Change of client expectations
4. Increased use of advanced technologies on the floor

Growing competition from international companies has had its effect on the sector overall. As more companies enter or grow within the market, Canadian companies must respond in a way that is efficient and cost-effective. Not only does it mean more options for customers, but also outsourcing of low-skilled jobs in other countries means Canadian employers cannot compete with the cost of production. This combined with the rise of minimum wage has led to a shortage of low-skilled jobs in the sector.

Competition for the higher skilled workers also means a tighter job market bringing the cost of production up.

Clients of manufacturing companies are also trying to lower operating costs and create a more lean business environment. This means more pre-planning and risk management prior to beginning production, requiring more technical project managers and the use of simulation as part of the planning process.

In response to growing competition, increased cost of production, and changing client expectations, manufacturing companies are increasingly employing more technology and automation within their day-to-day practices. This has also resulted in a shift in labour demand with less need for lower-skilled workers and more demand for workers with a higher understanding of the technologies being used, including computer numerical control (CNC) machining and programmable logic controllers (PLC). As skill level requirements become higher, so does the level of education and training. Overall, automation is seen as one of the main drivers of change within the sector.

Labour Shortage and Skills needs, Recruitment and Retention

The most in-demand or key positions within the manufacturing sector are mid-level skilled trades, particularly CNC machinists and operators, electricians, mechanical assemblers, and tool and die makers. Other key positions commonly mentioned were punch press operators, general labourers, machine repair, CMM operators, designers, and quality engineers. All employers stated they had recently hired for multiple positions and were planning to in the future. There was an obvious concern of a labour shortage within the sector.

The overall lack of skilled trades workers in the sector was a mentioned by all interviewees. As current experienced skilled tradespersons near retirement, there is a dire need for young people to take up these jobs. Respondents noted that there appears to be a lack of interest in, and/or awareness of, these jobs. The consensus was that young people are not encouraged to enter into the manufacturing sector and are not aware of the variety of careers available to them within the industry. This has led to difficulty in recruitment for many companies in the region.

There was less of a skills shortage mentioned as the main concern was just a lack of people entering the field. That being said, many interviewees emphasized the importance of experience when it comes to gaining both the technical and the soft skills required for the job. The Ontario Manufacturing Learning Consortium (OMLC) has developed an assessment tool that focuses on “attitudes and aptitudes”, emphasizing the need for getting the right fit when it comes to employees. Employers are noticing a vast difference in attitudes, soft skills and work ethic among new graduates and young job seekers.

New Graduates

Interviewees were asked to evaluate the job-readiness of new graduates in regard to both job skills/capabilities and life skills. The key strength among young applicants is their technological acumen. Weaknesses, though, showed the large gap between employee and employer expectations. A common theme that emerged is that young workers lack patience when it comes to both learning and growing within a company, have high expectations when it comes to compensation and promotions, lack a lot of the necessary soft skills and have a lower work ethic than their older counterparts.

While all employers stated compensation is increasing recently, opinions varied on whether new graduates valued base pay or benefits more. One employer believed they valued both equally, but all others felt that the base pay was more important for young workers.

Training Needs

Manufacturing employers interviewed typically do some new employee training and conduct existing employee training on an as-needed basis. The real challenge is not in training new employees but actually recruiting them. Only one employer was aware of financial supports and free employment services that are available to assist with recruiting and training needs.

As noted previously, recruitment into the manufacturing sector is a struggle with many employers constantly hiring and consistently unable to find enough bodies to fill those key positions. This has driven two organizations to start their own initiatives to meet the skills gap.

The Ontario Manufacturing Learning Consortium in 2014 introduced a work-based learning program to train CNC Machinists, CNC Setup, CNC Operators, CMM Operators and Structural Airframe Assemblers using an on-the-job training partnership with employers.[1]

[1] See Appendix A for OMLC Program Update
https://www.omlc.ca/

Financial Services

Sector Trends

Financial services representatives came from sub-sectors including financial planning, insurance brokerages, accounting firms, and a non-profit industry organization. It was noted that the sector is experiencing rapid changes largely due to the advancement of technology within financial services. Key factors driving change in this industry are:

1. Use of advanced technology across the sector
2. Emergence of FinTech companies in the market
3. Changing customer demands
4. Regulatory changes to the sector

Technology was mentioned by each interviewee as having a significant impact on the way financial service companies conduct business. Internally, companies are beginning to adapt and use more advanced technologies as part of their business practice. From basic shifts such as utilizing remote access servers to WebX conference calls, through to more advanced functions like using AI to gather research in the wealth management sector. Increased use of technology has added to efficiency and freed up time typically spent doing remedial tasks but has also increased the need for training in certain software. From a customer perspective, a lot more is available in the world of online financial products and services, creating competition for the more traditional financial service companies.

The introduction of financial technology (FinTech) companies into the market has disrupted traditional financial services and is forcing companies to move faster in order to meet consumer demands. Consumers now expect financial tools at their fingertips and want to deal with companies that adapt and serve at a much quicker pace. This leads to changes in practices and required skill sets as companies increasingly employ Agile project management, introduce new technology such as utilizing algorithms to create financial plans, and adapt to provide customers with what they want.

Regulatory changes were also mentioned as a driving factor for change in the sector, with pressure from consumers, the media and government for more transparency in financial services. This has created a need for continuous learning of new codes and regulatory standards.

Labour Shortage and Skills needs, Recruitment and Retention

The factors driving change are also contributing to a shift in skills needs from an employer perspective; mainly, employees must have technological acumen and be able to adapt to ever-evolving changes in technology. One representative noted the increased need for new skill sets rather than increased demand for certain positions. Graduates from science, technology, engineering and math (STEM) are increasingly in-demand in the financial services sector adding more complication to the recruitment process.

Other in-demand skills vary from business to business and include sales capabilities, financial literacy, communication, and computer literacy. Skills that go beyond financial knowledge include data analytics and Agile project management. Some companies value an entrepreneurial mindset as their employees work on commission and under the umbrella of the institution.

Consistently the sales, customer service and communication skills are most difficult to find. Soft skills are also consistently difficult to find, with employers noting a lack of presentation skills, professionalism, business etiquette and communication in new graduates. Emphasis on work-integrated learning was suggested in order to bridge this gap.

For the most part there does not seem to be a significant labour shortage in the traditional financial services sector in York Region, as much as there is a skills shortage. One employer noted the aging workforce with not enough young candidates coming in to replace them. The skills shortage refers more to the shifting skill set required with the movement towards more technologically-focused financial services companies.

Whereas their natural technological literacy is viewed as a strength, young job seekers seem to lack patience in their career growth and solid work ethic, as well as communication and business etiquette. When asked to evaluate the job-readiness of new graduates, employers emphasized the importance of these soft "skills" and the value of work-integrated learning programs in teaching these more practical skill sets.

Recruitment was said to be somewhat of an issue for employers, particularly those employing insurance brokers because the role is not salaried and young job seekers are looking for stable, salaried positions with adequate base pay. Financial institutions looking to hire STEM graduates also encounter challenges because of the lack of awareness of career opportunities from the perspective of the student. As financial services are not a traditional pathway for STEM graduates, it is a challenge to recruit them from more attractive technology companies in other sectors.

Employers feel that compensation is increasing across the market and that young people do seem to value both base pay and benefits. Retention is also an issue for some employers because of the commission-based companies interviewed.

Training Needs

Training for new employees is a priority in the financial services sector. Companies interviewed provide a lot of new employee training including comprehensive orientation, training for internal systems and culture, and development of knowledge and skills of the particular business environment. Training for existing employees is even more extensive with some companies offering 4 hours of internal training and upgrading per week.

Two employers were aware of financial supports and free employment services that are available to assist with recruiting and training needs.

The Toronto Financial Services Alliance (TFSA) noticing a gap in the sector has started on a pilot project called Aspire that is aimed at providing more work-integrated learning opportunities for students in the financial sector. This is a partnership between the TFSA, government, employers and postsecondary institutions that works to help employers gain access to students and skills they require, and helps to increase awareness of the vast career opportunities within the finance industry.

Information and Communications Technology

Sector Trends

Not surprisingly, all companies interviewed from ICT stated the sector is experiencing change at a rapid pace. Continuously advancing technologies are driving this change, with key changes mentioned being in the areas of cloud computing and cloud architecture, cybersecurity, big data analytics and management, artificial intelligence, UX design, and cognitive analytics. Beyond these technological advances the two key trends in the sector are:

1. Global markets and competition
2. Changing customer expectations and behaviour

Competition locally and globally was noted as a significant driver of change. As ICT companies worldwide compete to design and create new technologies, Canadian companies need to be constantly innovating as well. The need for highly skilled, adaptable workers with the most up-to-date knowledge has become a requirement for ICT companies.

Customers are more in-control than ever and have come to have high expectations of their ICT service providers. Changing consumer demands have created a need for more adaptable companies, continuous updating of software, and the ability to have nearly immediate turnover. This means ICT workers need to be adaptable and constantly upgrading skills in order to be ahead of the trend.

Labour Shortage and Skills needs, Recruitment and Retention

Companies interviewed said that they were hiring now and expect to continue hiring in the future. They did not identify a significant labour shortage, but did discuss a skills gap that has created a tight labour market and a “war for talent”. They emphasized that while people are available to hire, their skills may not always match the company’s needs. Some of the hardest skills to find are those that are learned through on-the-job experience. Employers noted a need for a balance between the technical and soft skills and that it is difficult to find individuals with both. Soft skills required include communication, problem solving, critical thinking,

There were many key positions in-demand across the sector: business analysts, data scientists, programmers, security expert, DevOps, cloud architecture, quality assurance, user experience designers, network engineers, software developers. Skills needs mentioned were Agile methodology, traditional coding languages, design thinking, and ability to understand the intersection of business and technology. Mainframe skills were also viewed as important because employees with the skills are nearing retirement, so the industry needs younger employers to take on the knowledge in that area.

When asked to evaluate the skills of new graduates, employers agreed that while generally well-equipped with technical skills and capabilities, soft skills and business etiquette are lacking, and students could benefit from either a course in these skills or work-integrated learning opportunities. Recruitment and retention was not recognized as a problem for the companies interviewed.

Training Needs

ICT companies generally do a lot of training for new employees. This ranges from training in specific software or systems used by the company to shadowing and mentoring for new recruits. Ongoing training for existing employees was seen as critical to the sector given the rapid pace of changing technologies. One company was aware of the Thornhill Hub training program for new graduates and used this as a free resource for training employees.

Suggestions for closing the skills gap focused mainly on work-integrated learning opportunities and fostering the soft skills in younger job seekers and employees. As a response to the fact that postsecondary institutions are not turning out graduates with the right skills, IBM created the New Collar initiative that proactively engages high school students in coding and app development. This program is currently running in the United States and will be introduced in Canada in 2018.

Appendix A

Ontario Manufacturing Learning Consortium

Ontario Advanced Manufacturing Companies are Pioneering 'Work-Based Learning' to successfully hire and train Unemployed/Underemployed Youth in Entry / Mid-Level Skilled Jobs and start rewarding careers

More than 45 Ontario advanced manufacturing companies of all sizes are pioneering a whole new way of filling important entry and mid-level skills gaps in their workforces. Over the past 3 years, these companies—with support through Ontario's Youth Skills Connections (YSC) program and the Canada-Ontario Jobs Grant (C-01G) program —have used Ontario Manufacturing Learning Consortium (OMLC) programs to select, hire and train over 380 interested and capable unemployed youth as CNC Machinists, CNC Setup, CNC Operators, CMM Operators and Structural Airframe Assemblers and start them towards rewarding, long-term careers in advanced manufacturing.

This new way of hiring and training / upskilling can be called Work-Based Learning' — a fast (half the normal training time), reliable (84%-90% success rate) and efficient (low cost) way for companies to get the skilled employees they need, AND, at the same time, for youth who have little or no relevant work experience and often limited educational achievement to be hired, acquire employer-valued knowledge & skills for good paying jobs and start a solid career path.

OMLC's Selection & Work-Based Learning Programs change the paradigm for company investments in training — yielding high returns quickly with high success rates (low risks). Youth who have the right aptitudes and attitudes for these jobs are hired at the start of their training program, learn with confidence, 'earn while they learn', and become OMLC-certified — and almost all of them continue their employment with the company that hired and trained them.

How did this happen? Ontario advanced manufacturing companies needed many CNC Machinists, CNC Operators and Structural Airframe Assemblers but couldn't find experienced ones, so agreed that training programs would be a good solution. The Ontario Government, through the Youth Skills Connections (YSC) Program — Industry Stream, contributed up to $3.5 million and participating companies contributed up to a further $6.3 million, and the OMLC Work-Based Learning Program Team provided the expertise, methods and systems to deriver true 'competencies-based, outcomes-driven' Selection & Work-Based Learning programs —fast, reliable and low-cost training.

What are the results? By the end of these YSC projects (March 2018), Ontario advanced manufacturing companies will have successfully trained over 130 Structural Airframe Assemblers and over 160 CNC Machinists, CNC Setup, CNC Operators and CMM Operators. The Certification and continuing employment rate for all completing Trainees is 84% - 90% - a remarkably high rate considering that these are young people (18-29) most of whom have never worked in manufacturing and many of whom have only their high school diploma or less. But, as companies already know, youth with the right aptitudes and attitudes will learn quickly and well. That's what OMLC's selection & learning programs do — find youth with the right aptitudes and attitudes for the job and help them acquire— mostly through 'hands-on' experiential learning on the shop floor — the knowledge and skills that companies want to make them valuable, productive employees — quickly, reliably, and cost-effectively.

What's next? Many more Ontario companies in diverse sectors continue to find it difficult to hire the entry/mid-level skilled people they need. OMLC now has a proven track record, established systems and is ready to add new learning programs and scale up to help hundreds of Ontario companies of all sizes to select, hire, train and certify youth as new employees in entry/mid-level skilled jobs — thousands of them — quickly reliably and cost-effectively.

Rod Jones ***Managing Director, OMLC*** RodJones@omlca.ca ***416-399-2648*** www.omic ca

2017-10-24 Rev 4

wpboard.ca

Workforce Planning BOARD

OF YORK REGION & BRADFORD WEST GWILLIMBURY

Workforce Planning Board of York Region and
Bradford West Gwillimbury acknowledges the funding from:

EMPLOYMENT ONTARIO

Building tomorrow's workforce together