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Labour Market Partnership
British Columbia's Technology Sector

Phase 3: Talent Strategy Development

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Foreword

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This technology talent strategy is an industry-led initiative facilitated by the Vancouver Economic Commission and funded by the Sector Labour Market Partnerships program.

The Labour Market Partnership Program (LMP) helps industry and employers understand and respond to changing labour market demands. The Program also provides funding for partnership-led projects that address broader sector and regional labour market issues within British Columbia's diverse economy.

The Vancouver Economic Commission (VEC) is the economic development agency for the City of Vancouver, which hosts a significant portion of BC's booming technology sector and its talent. The VEC works to position Vancouver as a globally-recognised city for innovative, creative and sustainable business, and achieves its objectives by working directly with businesses, and the wide range of stakeholders with whom they interact. Stakeholders range from elected officials and departments of all levels of government to peer organizations, industry associations and educational institutions. This on-the-ground approach allows the VEC to understand fundamental talent and capital dynamics in the city, address and identify gaps to allow existing businesses to grow, and inspire others around the world to call Vancouver their home.

The Vancouver Economic Commission (VEC) is pleased to have been chosen to lead and facilitate this third round of the technology sector LMP with industry stakeholders and develop a pan-provincial technology talent strategy. The VEC would like to express its deepest appreciation to all those who contributed to this strategy, particularly the many industry stakeholders whose ideas, suggestions and invaluable time form the basis of the report, and without whom this work could not have been completed. The VEC would also like to give a special thanks to its many partners at the province of British Columbia, especially at the Ministry of Jobs Tourism and Skills Training (JTST), the BC Tech Association, and the Information and Communications Technology Council (ICTC), who contributed the data that was so critical to informing those ideas and focusing the recommendations found in this report.

The VEC would like to also acknowledge and thank the agencies and individuals of the provincial and federal government that have already made progress in some areas discussed in this report, such as with immigration, education and marketing and outreach.

Bryan Buggey
Director, Strategic Initiatives & Sector Development
Vancouver Economic Commission

Executive Summary

The technology sector is one of the fastest growing industries across the globe and the talent pool has struggled to keep pace.

In British Columbia, the technology sector has grown over 90% in the past 15 years[1], and its over 9,500 companies now contribute over $15 billion in GDP annually and over 100,000 jobs to the economy[2].

However, BC's current talent supply channels are unlikely to meet the future demand for talent. In fact, forecasted demand indicates that more than 30,000 jobs (people) are needed than current supply channels can provide between 2017 and 2021.[3] This is a significant shortfall of talent in a sector that has grown 6% in the last year and pays average wages that are 75% higher than the BC industrial average. This situation also risks preventing companies – the ones that have fueled this growth of high-paying jobs, salaries and our economy – from expanding here or even staying in the province if their needs can't be met.

This current state and forecast has led industry stakeholders to ask: What are the policies, programs and other levers that can meet the growing talent demand of companies?

This technology talent strategy contains some potential answers to that question in the form of recommendations to industry and government. They are based on consultations with nearly 500 stakeholders across the industry and province over a six- month period, as well as the stakeholder engagement and extensive data collection and analysis that preceded this project.

The recommendations are organized into three key areas: recruiting, retaining and educating talent. They address the need to continue building on the leading social and physical infrastructure that BC already has in place and acts as the foundation of a strong technology talent ecosystem.

The nine recommendations are:

Recruiting:
1. Maximize the domestic workforce through effective outreach and removal of barriers to entry;
2. Launch coordinated national and global promotional campaigns;
3. Improve immigration policies and processes;

Retention:
1. Facilitate easier integration into the sector and province for underrepresented groups and new immigrants;
2. Support industry in implementing more progressive HR practices;
3. Extend and leverage programs that retain quality foreign talent;

Education:
1. Expand practical learning and industry-related curriculum in K-12 schools;
2. Increase capacity, access and co-ops of post-secondary institutions;
3. Increase re-training and up-skilling programs.

For the specific initiatives associated with these recommendations to be effective, key performance indicators need to be set, and progress towards those KPI's monitored, measured and reported against established timelines. These KPI's and timelines are best determined in collaboration with the partner organizations that move forward with designing the initiatives, and lead in implementation, given their deep expertise in each area and with each audience.

Taking these steps, and those outlined in the body of this report, will help BC improve prospects for its domestic workforce and become one of the leading global destinations for technology talent – a designation that is critical to accelerating sector growth and innovation.

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[1]   2016 TechTalentBC Report
[2]   2016 KPMG Technology Report Card
[3]   BC TechTalent Report

Background

BC's Booming Technology Sector

For those in the technology industry, British Columbia is an exciting place to be. The province is home to over 9,500 companies from subsectors that include Information and Communications Technology (ICT), Interactive and Digital Media (IDM), Clean Tech, Life Sciences, and Engineering Services. Those companies contribute over $15 billion in GDP.[4]

The sector's astounding growth in recent years has fueled this success. Despite the impact of the 2008 recession, the contribution of BC's technology industry to GDP has grown over 13% over the last two years, making it one of BC's top five sectors, larger than traditional industries like forestry, mining, oil and gas.[5] Sector employment and wages have also grown. BC had nearly 150,000 tech jobs in 2015, and wages have risen by nearly 5% on average over the last 10 years to a level that is now 75% higher than the province's industrial average[6].

The 2016 KPMG Tech Report Card report suggests that the sector has more room to grow. While start-ups still dominate the ecosystem, there's been a positive upswing in the number of medium and large companies (by 18% and 14% respectively)[7]. In addition, the report found that BC has many of the same ingredients as other major technology hubs around the world. With revenues and GDP still far short of those global hubs, KPMG concluded that BC's tech sector has the potential to hit its "next growth phase."

This potential is positioning BC to take advantage of the growing global reputation of the Canadian tech sector. While the U.S., India, and China were projected to be the top markets for growth between 2015 and 2016, KPMG highlighted Canada's projected rise from 23% to 30% in market growth, and suggested it "also posed high expectations."[8]

The Role of Talent in the Success
The importance of human capital – the employees vital to the ability of a business to produce a product or deliver a service[9] – in business innovation and growth continues to rise. This is especially true in the technology and other knowledge-based sectors. As a result, about half of CEOs have identified talent management as a key priority.[10]

Constrained Employment Growth — Chart 1
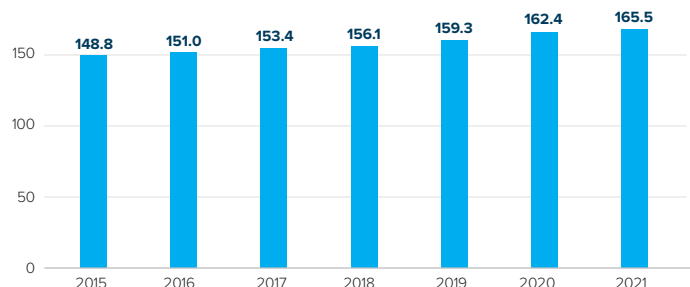
Source: ICTC Econometric Forecasting Model for Employment in BC's Tech Sector (2016)

Special Note

The 2016 TechTalent BC Report predicted employment growth based on two different scenarios: constrained growth, of 1.8%, and expanded growth, of 4.7%, of the tech sector until 2021. Given the rate of growth of the sector of the last 10 years, we will refer to the expanded growth rate for this report.

The importance of talent has made BC's major tech hubs particularly attractive destinations, as they have a global reputation for high-quality, innovative technology talent. Data on the productivity of BC's technology sector shows it is one of the nation's top performers, exceeding the Canadian average for revenue per employee[11].

In addition to talent quality, Vancouver ranked sixth most competitive for cost in a study that compared tech talent markets in Canadian cities using a range of data (supply, growth, concentration, cost, completed degrees, the industry outlook for job growth and the market outlook for both office and apartment rent cost growth)[12]. Vancouver ranked 50th lowest cost in a similar study done for all North American cities[13].

This combination of high-quality and cost-competitive talent has helped grow local companies, such as Hootsuite, Avigilon and Slack, into global successes, and attract major global companies, such as Sony Imageworks, Amazon, SAP and Microsoft. The phenomenon is most visible in Vancouver, which boasts the world's largest visual effects and animation hub and home to one of the world's top video game clusters.

It has also fueled demand for more of this critical business ingredient - and a concern about the ability of BC's supply channels to meet this growing demand in the future. The

4   KPMG 2016 Tech Report Card
5   KPMG 2016 Tech Report Card
6   2016 TechTalentBC Report
7   KPMG 2016 Tech Report Card
8   KPMG 2014 Technology Industry Outlook
9   ERE Recruiting Intelligence
10   CIDP 2015 Resource and Planning Survey Report
11   2016 TechTalentBC Report
12   2016 Scoring Canadian Tech Talent, CBRE Research
13   2016 Scoring Tech Talent, CBRE Research

KPMG Report Card warned that "to maintain and accelerate this growth, continued support for some critical ecosystem elements was required," and specifically highlighted jobs and talent as a key issue for the sector.[14] That was confirmed by the 2016 TechTalentBC Report analysis, which showed potential employment growth to 196,000 jobs by 2021 can only be realized if new supply can be added to the workforce.[15]

The Talent Crunch

The 2016 TechTalentBC Report also predicted that current supply channels would only be able to fill about 16,500 of those jobs by 2021, leaving 30,500 job opportunities vacant. This anticipated labour supply challenge can already be seen in the current levels of unemployment in all occupations (technical and nontechnical) in the five technology subsectors. The sector's average unemployment rate of 4.3% was nearly 2% lower than the BC industrial aggregate average in 2015.[16]

Wage trends also show that the sector's labour supply is tightening. Compensation levels increased from 2010-2014 across all of the tech industries, with Engineering Services showing the highest weekly wages at $2,000 in 2014. While this reflected 13% growth, wage increases were even higher in the Interactive and Digital Media sector, with average earnings rising almost 300% to $1,450 per week.[17]

Fig. 1	The Five Subsectors of the Technology Sector

Information & Communications Technology (ICT)
Information & Communications Technology companies include those specializing in software, cloud computing, information technology, telecommunications, and electronics manufacturing.

Lifesciences (LS)
Lifesciences companies include those commercializing pharmaceuticals, medical devices, research, and testing platforms.

Interactive & Digital Media (IDM)
Interactive & Digital Media companies specialize in new platform technologies for mobile applications, social media marketing, augmented & virtual reality, and film, video game & digital animation.

Cleantech (CT)
Cleantech companies develop solutions related to alternative energy generation, storage, environmental remediation and resource management systems.
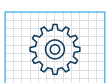
Engineering Services (ES)
Engineering Services companies specialize in information technology, engineering, and environmental services.

Nationally, BC's technology sector had the second highest average weekly wages (surpassed only by Alberta in 2014). Its average of $1,580 per week was higher than both Ontario's and Quebec's, provinces with the highest number of tech jobs in Canada. BC's average wage growth was also the most substantial, with an almost 6% increase in the compound annual growth rate from 2010-2015. Ontario's and Quebec's wages remained fairly stable over the same period, growing only 1.8% and 3%, respectively.[18]

Compared to other sectors, tech wages have been soaring. At $1,590 per week, they are 75% higher than the BC industrial average. The average weekly wage in the BC economy overall was $910 in 2015. At a rate of 25%, technology wages also grew substantially higher from 2010-2014 than all other wages (which grew 9.8%)[19]. On a national basis, the weekly average wage for Professional, Scientific and Technical Services was $1,361 in 2015, meaning BC's tech sector surpassed every other sector and was four times that of the lowest paying sector (Accomodation and Food Services).[20]

Other indications show that this already-tight technology labour supply could worsen. Firstly, sector companies rely on new graduates from BC's post-secondary institutions to fill about 40% of their talent needs[21], but the growth rate of tech graduates, in technical and nontechnical roles, is insufficient to meet those needs[22]. Secondly, local technology companies rely heavily on their local peers in the province to fill their talent needs (over 30%)[23], so relying on this supply channel simply cannibalizes the ecosystem instead of growing it.[24]

Impacts on Industry and Economy

BC is not the only jurisdiction facing a talent shortage. The number of employers globally reporting talent shortfalls in 2015, the most recent year reported, peaked at a seven-year high of nearly 40%, with no indication of a downturn[25]. Studies show this is seriously affecting businesses. A 2015 survey by Price Waterhouse Cooper found that nearly 75% of CEOs worldwide insist that the availability of skills was a concern to the timely function of their companies.[26]

This skills shortage has pushed wages up in other parts of North America even higher than in BC, making the province's talent base even more attractive to companies globally.

14   KPMG 2016 Tech Report Card
15   2016 TechTalentBC Report
16   2016 TechTalentBC Report
17   2016 TechTalentBC Report

18   2016 TechTalentBC Report
19   BC Stats Profile of the BC Technology Sector 2016
20   Statistics Canada
21   2016 TechTalentBC Report
22   2016 TechTalentBC Report
23   2016 TechTalentBC Report
24   LMP roundtables
25   Manpower Group's 2015 Survey
26   PWC 2015 People Strategy for the Digital Age survey

With the 2014 average tech wage in California, Washington and Colorado about $2,800, $2,500 and $2,100 per week, Vancouver ranked in 2016 as the most cost-effective technology hub in North America for companies to do business [27], and one of the most affordable large technology ecosystems in Canada.[28]

"*Despite the higher cost of real estate in Vancouver, this is dwarfed by the cost of wages. When you add in that over a third of the labour pool is university educated, and they already provide established tech networks and communities, its little wonder that many international firms are looking to set up shop here.*

Furthermore, compared to the top 50 most expensive North American tech markets, Vancouver is 50th in the rankings, assisted by a low Canadian dollar. This makes Vancouver a relative bargain for US firms looking to expand."

RAYMOND WONG
Head of Research at CBRE, a global commercial real estate firm

Yet, this advantage poses challenges for the future. While lower salaries attract companies, they deter talent from staying in BC. Many local employers have already cited salary competition with U.S. cities as a serious challenge for attracting and retaining top employees. This is exacerbated by increasing living costs in BC. These factors, when combined with increasing movement of talent between companies, have resulted in higher turnover rates. The resignation rate of BC's technology sector typically hovers around 2.3%, but in Q3 and Q4 of 2016, the province saw rates of 3.7% and 3.6% [29]. This turnover costs tech companies nearly $110,000 on average per quarter, due to the loss of knowledge that goes with it. This is significantly higher than the cost to other, non-knowledge-based industries – typically under $55,000 per company[30].

Companies often look to immigrants and new graduates to fill talent gaps, especially at the senior levels. However, talent-related challenges, both nationally and provincially, in immigration and education have made it difficult to rely on these supply sources and allow business growth to reach its full potential[31].

Some of the difficulties in BC's education system mirror those found elsewhere in Canada. Canada recently ranked as the 11th worst country in the world for its ability to match the skills of workers with the constantly evolving needs of employers, contributing to a nation-wide talent shortage of over 30%.[32] Immigration challenges have been particularly impactful on companies since scarce senior talent is often found overseas. International talent plays a critical role in developing local talent to become future leaders, so difficulties immigrating senior talent perpetuates the cycle[33].

These factors have contributed to nearly 3,000 open technology job postings in BC at the time of publication of this report[34]. Employers say that their inability to fill them is slowing their growth, and in some cases, forcing them to consider moving operations outside of the province.[35] They worry that rising labour costs, caused by a talent shortage, could only exacerbate the problem, given the huge role of labour costs in attracting and retaining knowledge-based companies in general, and erode Vancouver's reputation as a lower-cost labour centre. [36]

For these reasons, solving the talent crunch would benefit BC enormously. The KPMG Report Card concluded that increasing the talent pool in BC will "drive the sector forward in terms of output and innovation."[37] The potential upside goes well beyond the sector too. As the CBRE 2016 Scoring Tech Talent Report points out: "Employment growth in tech occupations has a multiplier effect that positively impacts economic growth."[38] The challenge will always be to balance ecosystem costs (including labour) against the ability to attract and retain technology businesses. This is where the delicate tension will remain.

That's why the VEC, BC Tech and many others have come together to support the technology industry in developing this technology talent strategy. Improving BC's talent outlook and supporting its continued momentum will help our companies grow, develop their employees, and increase the number of higher-paying jobs in the local economy. These actions, if successfully implemented, will create further diversification and resiliency of the BC economy.[39]

27   CBRE Research 2016 Scoring Tech Talent report
28   CBRE Research 2016 Scoring Canadian Tech Talent report
29   HR Tech Group ED Quarterly Update (Jan 2017)
30   HR Tech Group
31   LMP Roundtables
32   OECD report, Getting Skills Right: Assessing and Anticipating the Changing Skill Needs

33   2016 TechTalentBC Report
34   BCJobs Analysis 2017
35   LMP Roundtables
36   CBRE Research's 2016 Scoring Canadian Tech Talent report
37   KPMG 2016 Report Card
38   CBRE Research 2016 Scoring Tech Talent report
39   LMP Phase 1 and 2016 TechTalentBC Report

The Purpose of the Technology Talent Strategy

Talent is the key to keeping our sector competitive and resilient on the global stage.

Although 54% of employers from around the world say that talent shortages impact their ability to serve client needs, more than one in five employers said they have no strategy to tackle talent shortages.[40] With the following recommendations, and continued collaboration in this area, BC's technology industry leaders can help its companies get ahead of the global crowd.

In developing this strategy with many diverse stakeholders, industry leaders spearheading the efforts were bound to discover different needs – by company, subsector and region. However, they also found common themes, whether it was the desire to connect with larger tech hubs, in the province and abroad, or the desire to differentiate themselves in marketing.

Stakeholders shared some of the innovative and progressive practices already in place – from their enormous internship commitments to their progress engaging underrepresented groups. Together, they found a common goal: for companies to meet their pressing talent need now and develop a local and diverse talent pool for the future.

There was recognition of the tension in that goal. Fast-growing companies prefer talent that is local since local hiring reduces relocation and hiring costs. At the same time, technology companies need highly-skilled, globally-minded talent that is trained and ready as research shows diversity drives innovation[41].

These recommendations strive to help our companies do both. We know that in some cases, it will take a while. However, stakeholders are inspired and determined, knowing that progress will put BC on the path to achieving their vision – to establish the province as a leading global tech hub, where a diverse, domestic workforce can grow their careers and standard of living, technology companies of all sizes can grow their revenues, and we can all enjoy the benefits of a strong, resilient economy.

40   Manpower Group's 2015 Survey

41   Harvard Business Review, 2013, How Diversity Can Drive Innovation

Methodology for the LMP Phase 3

Overview

Technology industry leaders first came together in late 2015 under the banner of this Sector LMP engagement project. This first phase identified the most urgent issues and recommended the establishment of sub-committees to carry the work forward.

Data collection and analysis (headed up by BC Tech and ICTC) was carried out in the second phase of this Sector LMP, in 2016, in an attempt to quantify many of the emerging issues. It was decided that this third phase to build the strategy would

be conducted concurrent with the data collection exercise so that data needs and gaps could be identified by stakeholders to further inform the included recommendations.

After establishing that there was a significant shortfall of the right kind and volume of workers within the technology sector to facilitate the realization of its potential, leaders from the Information Communication Technologies, Cleantech, Digital Media and Entertainment, Life Sciences and Engineering Services established a process to identify solutions, organized around subcommittees focused on four key areas:

Fig. 2   **The Four Technology Subcommittees**

Technology Subcommittees

Education & Job Readiness	Recruitment & Retention	Immigration	Diversity & Outreach
Educating various ages and groups, in a variety of formats and on a range of subjects needed by the technology industry	Attracting the right quality workers, from the right markets, and keeping them in the province	Removing barriers to obtaining highly-skilled, specialized and in-demand international talent	Ensuring under-represented groups are engaged and represented in BC's tech ecosystem; maximizing domestic workforce

In developing these solutions as part of Phase 3, the VEC assisted leaders from the technology industry to engage nearly 500 fellow industry stakeholders through 18 in-person roundtables throughout the province. In the first round, the subcommittee Chairs facilitated a series of roundtables with senior human resource professionals from the tech industry to identify gaps in the issues already identified and start to brainstorm solutions. Industry representatives were then convened in the cities of Victoria, Nanaimo, Abbotsford, Kelowna, Kamloops, and Prince George. Please see Appendix #2 for a full list of Stakeholders.

An online engagement platform, Thoughtexchange,[42] was used to capture over 200 additional ideas from interested stakeholders throughout the province who were not able to attend the meetings. Over 30% of those participating online were C-level or senior management, and 20% were senior career individuals.   Other stakeholders were technology service providers, educators, juniors or mid-career professionals, students and recent graduates. Participation by region and company size broadly reflected the composition of the province's technology industry.

[42]   Thoughtexchange

Synthesizing the Feedback

By the end of the process, nearly 1,500 ideas had been generated by participants. Roundtable and online participants reduced those ideas to themes in the second series of meetings and online engagements.

The themes were further reduced to a broad group of recommendations through a final series of roundtables with 150 stakeholders across the four subcommittees, as they compared their solutions with data from the 2016 TechTalentBC Report and global trends highlighted by the literature review in validation sessions.

The final recommendations in this report were identified through consultation with the leadership team of the subcommittees.

Fig. 3   **Synthesizing Feedback into Nine Recommendations & Three Pillars**

ENGAGE THE TECH COMMUNITY	**500** STAKEHOLDERS
ENSURE SUBSECTOR REPRESENTATION	**5** SUBSECTORS
DEVELOP SUBCOMMITTEES BASED ON PHASE 1 DISCOVERY	**4** SUBCOMMITTEES
IDENTIFY SOLUTIONS IN WORKSHOPS AND ONLINE*	**1,500** IDEAS
SYNTHESIZE IDEAS INTO ACTIONABLE RECOMMENDATIONS	**9** RECOMMENDATIONS
IDENTIFY COMMON THEMES	**3** PILLARS

THE FIVE SUBSECTORS

Information & Communications Technology (ICT), Lifesceicnes (LS), Interactive & Digital Media (IDM), Cleantech (CT), Engineering Services (ES)

***Thoughtexchange**

Thoughtexchange is a digital platform that allows groups to engage online by leading conversations about issues. It allows you to ask challenging questions, hear from everyone, allow thoughts to be ranked through a starring system and helps the group discover what is important to them.

www.thoughtexchange.com

Key Issues Identified

Through extensive consultation and analysis, the following nine issues were identified as the most commonly heard for recruitment, retention, and education.

This section is followed by a foundational ecosystem discussion. These are supported by data from the 2016 BC TechTalent Report and outside sources.

Recruitment Issues

Recruitment includes the activity of talent attraction by companies as well as the ability for the sector as a whole to attract talent from other parts of Canada and the world. Therefore, immigration policy is included in this section as it influences the industry's ability to recruit.

Issue #1:
There is a lack of awareness among underrepresented groups of jobs in the tech sector and there are systemic barriers to entry.

Although tech jobs in BC pay over 75% more than the average wage in BC, awareness of opportunities in the sector is low. Stakeholders suggested that organizations and institutions that typically provide information about career and job opportunities could better promote the many benefits of working in the sector[43].

This lack of awareness and promotion are reflected in BC's diversity rankings – by outside organizations and employees. The Minerva Foundation listed BC's technology sector as one of the lowest in diversity,[44] and not a single BC tech company was able to make Deloitte's rankings of Canada's most diverse employers[45]. Based on responses from job seekers in the tech industry, this lack of diversity and inclusion was also reported as one of the top four challenges in the tech workplace[46].

This is particularly evident in certain groups. Women represent nearly 50% of the BC labour force today[47], and the majority (55%) of all university graduates in the province. However, the tech sector is only 21% female, and the situation is unlikely to shift on its own when one considers that on average, that

same small proportion of engineering and tech graduates at BC's largest universities, are female.[48] Data regarding individuals with disabilities engaged in the labour force is not available at the provincial level. However, there were a total of 2,338,200 individuals in Canada in 2015 who reported some level of disability. Of those, nearly 20% were seeking employment and indicated that their disability did not prevent them from working, representing a huge potential talent pool for the BC technology industry[49].

First Nations people aged 18 to 65 represent 2.5% of the BC population, yet comprise less than 1% of the technology workforce.[50] One reason for this is the lack of connectivity and this is exacerbated because some First Nations communities in BC are remote, small or lack the financial resources to pay $80/month for internet services. Without basic access to online services, these communities are at risk of being left out of the knowledge economy[51].

Issue #2:
There is lack of awareness nationally and globally about tech career opportunities in BC.

A lack of awareness about opportunities in, and misperceptions about, BC's tech industry across the country and in global tech hubs are contributing to BC's tech talent challenges. Individual companies and organizations promote career opportunities, but these efforts often lack the coordination necessary to yield significant results for the province as a whole.

Ministry of International Trade research reflects the lack of global awareness about opportunities in BC[52]. In addition, research commissioned by the Vancouver Economic Commission also highlights that Vancouver's tech sector (BC's most recognised) is not regarded internationally as highly as

43   2016 TechTalentBC Report
44   The Face of Leadership, BC Scorecard 2016, Minerva Foundation for BC Women
45   2014 Report on Diversity and Inclusion in Canada, Deloitte Canada
46   2016 TechTalentBC Report
47   BC Labour Force Statistics 2016

48   BCHeadset.ca 2015/2016
49   Employment and Social Development Canada survey (2015)
50   2016 TechTalentBC Report
51   First Nations Technology Council
52   BC Ministry of International Trade internal research, 2016 (not publicly available)

its peer cities, and is still largely associated with traditional sectors, such as natural resources[53].

This is reflected in the challenges companies face hiring at the senior level, where they typically recruit talent from outside the province. Whether sourcing talent for technical or non-technical roles, data shows that the majority of BC tech companies (over 60%) face severe challenges in hiring top-level talent, even though senior level talent makes up 20% of recruitment efforts[54].

Issue #3:

Despite recent improvements, challenges with immigration policies and processes continue to impede sector growth.

Companies that need large numbers of employees, and more senior employees, often struggle to navigate the various immigration programs in their efforts to source international talent within a reasonable timeframe. Employers surveyed for the 2016 TechTalent BC report indicated that average wait times for work permits were four to six months – far too long for an employer looking to fill a position in the tech industry.

More specifically, the data showed that 60% of BC tech companies surveyed considered the application instructions and requirements of the top immigration channels (such as the TFWP) to be poor or very poor.

This has adversely affected perceptions of immigration as a viable talent recruitment option, especially among smaller companies, given their limited resources and low risk tolerance. The need for mid-level and senior talent, cited by employers as by far the most difficult roles for which to hire, and the lack of that talent locally, has driven larger companies to continue pursuing immigration channels with the hope of different results[55].

In the meantime, BC's businesses largely rely on poaching talent from other businesses to fill their needs or go without filling the positions. Data from the 2016 BC Tech Talent report shows this is unlikely to change, given that the supply of skilled immigrant workers is predicted to be insufficient to satisfy the industry's projected growth to 2021. Specifically, BC will need an 13,500 skilled workers from foreign markets to fill key specialized roles in an expanded growth scenario[56].

Retention Issues

Retention includes the activities related to a company's ability to keep high-quality employees, including how temporary work and graduate permits are handled. It also involves supporting talent in professional and career development within organizations and across the sector.

Issue #4:

Difficulties integrating into the sector for the newly landed to BC, and those transitioning into tech

When it comes to considering and assessing international career opportunities, talent will consider how easy the transition will be once they have landed the new job. This includes both entering a new sector as well as coming to a new country, for themselves and their families. In fact, one study cited family obligations as the number one consideration for job seekers in mobility[57]. Other specific considerations include access to spousal job networks, school information, housing and other resources to help them easily integrate into their communities and workplaces.

Stakeholder roundtable discussions have highlighted a lack of relevant services, such as job matchmaking for immigrants and training for immigration case managers about the tech sector. Data also show the unemployment rate for immigrants in BC slowly falls from 11% (after 5 years) to 5% (after 10 years) after landing, meaning it takes a long time for new immigrants to be fully utilised and absorbed into the job market[58].

Research also indicates that the skill areas where immigrants received the most unfavourable feedback were interpersonal skills (selected by nearly 15% of companies as poor and very poor), ramp up time (selected by nearly 15% of companies as poor and very poor) and cultural fit within the company (selected by over 10% of companies as poor and very poor)[59]. Improving this situation is critical since 13,500 additional immigrant technology workers will be needed by 2021 to meet expanding industry needs[60].

For under-represented groups in BC, such as women, disabled individuals and First Nations, being a new worker in an unfamiliar setting can also cause challenges. Reasons include an unfamiliarity with business processes and a fear of cultural isolation and exclusion. Even after they land in the sector, underrepresented groups can still struggle to adapt, deepening the sector's retention challenges. The situation is further exacerbated by the fact that nearly 80% of BC tech companies do not have formal diversity policies in place, despite the importance that job seekers place on the issue[61].

53   VEC internal brand research, 2015 (not publicly available)
54   2016 TechTalentBC Report
55   2016 TechTalent BC Report
56   2016 TechTalent BC Report

57   Manpower Group, 2015 Study
58   Statistics Canada
59   2016 TechTalentBC Report
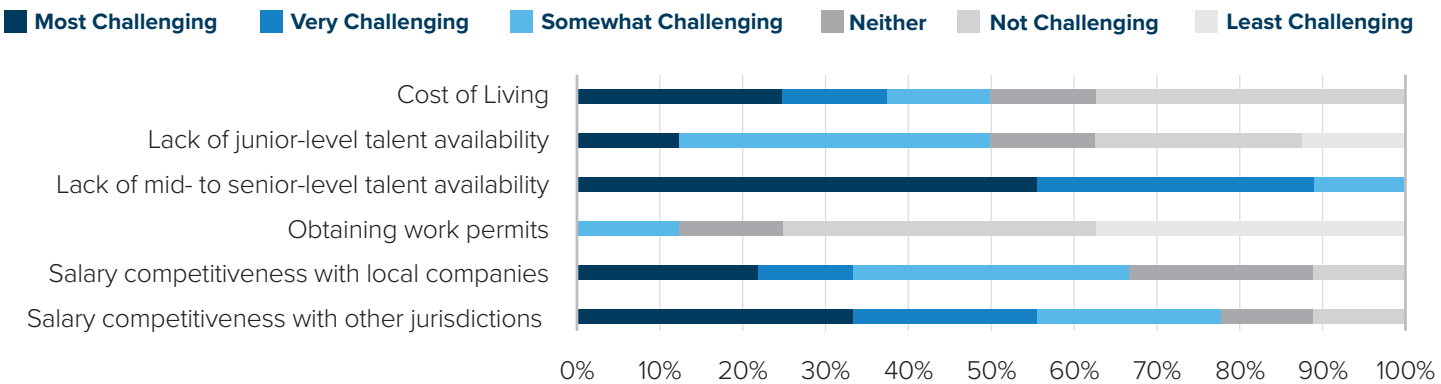60   2016 TechTalentBC Report
61   2016 TechTalentBC Report

Issue #5

A lack of progressive HR practices that support retention

In the evolving field of technology, human capital best practices need to be constantly updated to develop and retain technology workers. The technology industry in BC is mostly made up of small-to-medium sized enterprises that don't yet have the resources or capacity to invest in this level of human resource management.

Overall, the top retention challenges as felt by BC's tech employers were: better salary offers from local companies, cost of living and better salary offers from other jurisdictions, making compensation, in light of living costs, a key concern for BC's tech companies[62].

Chart 2   Top Recruitment Challenges (from the four regions)

Legend: ■ Most Challenging ■ Very Challenging ■ Somewhat Challenging ■ Neither ■ Not Challenging ■ Least Challenging

Source: BC Tech LMP Employer Survey (2016)

Extracted from a survey[63] of job seekers in BC's tech sector, the top 3 reasons for seeking new employment were: lack of work-life balance at the current role, lack of succession planning and better salary offers from other companies in BC.

Thoughtexchange data showed participants putting a high importance on opportunities for professional development, whether it be on-the-job skills training or personal growth opportunities like community giving and mentoring.

Chart 3   Top Reasons for Seeking New Employment

Legend: ■ Most Motivating ■ Very Motiviating ■ Somewhat Motivating ■ Neither/Not Motivating/Least Motivating
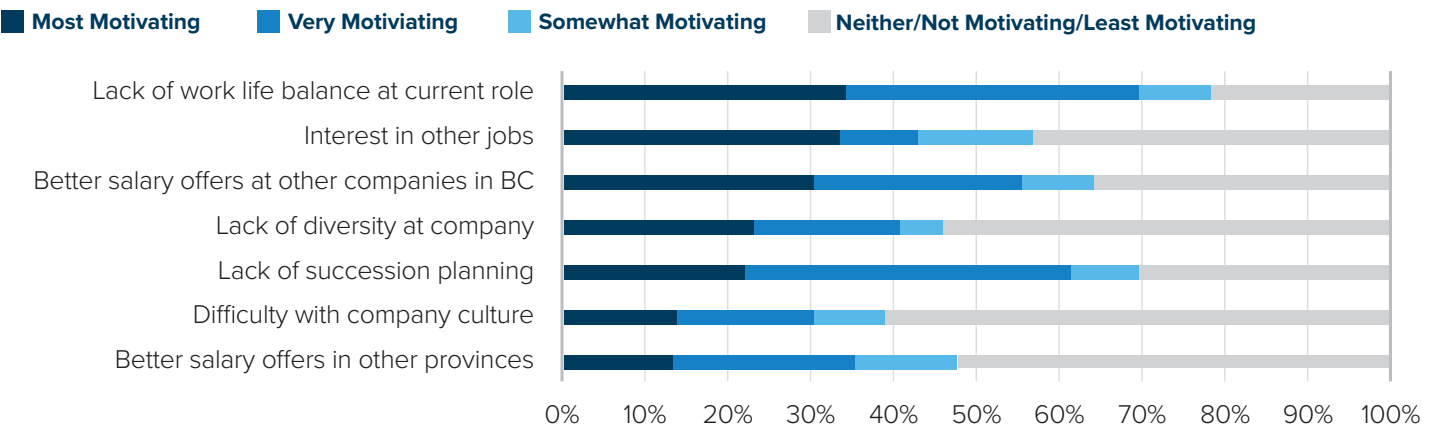
Source: BC Tech Job Seeker Survey (2016)

62   2016 TechTalentBC Report
63   2016 TechTalentBC Report

While this issue was not explicitly addressed in the stakeholder roundtables, it was acknowledged that salaries in BC are not competitive on the global stage. Technology salaries in BC may be the highest in Canada (and rising rapidly), but stakeholders say that the higher salaries found elsewhere in North America are a barrier to attracting much needed senior and seasoned talent from overseas[64].

Stakeholders also identified the lack of childcare, sometimes provided by companies, as an issue affecting the percentage of women in BC's technology sector. Only 30% of tech companies provide top-up pay for maternity leave, and under 10% provide a subsidy or assistance with off-site daycare[65]. In addition, nearly 15% of companies indicate that they have had employees resign or not return due to daycare issues[66]. These are some of the potential reasons why only 21% of the technology workforce is female[67].

Issue #6:

Loss of high-skilled foreign workers who are already working in BC

Valuable overseas students are being forced to leave the province after their study permits expire. Many qualified students are unable to work after studying in BC, given their lack of enrollment in educational programs eligible under the Post Graduate Work Program (PGWP). A number of private schools lost their eligibility for the PGWP in 2013, when the pilot ended, to allow only the participation of public post-secondary institutions and a few private post-secondary institutions. As of September 2016, of the 249 Designated Learning Institutions in BC, only 14 private institutions are eligible and, of those, only their degree programs qualify, not their diploma programs.

This change significantly affected the number of workers in the international labour pool. For example, the private Vancouver Film School reported that nearly 400 international highly-skilled graduates received a PGWP permit in the last year of the program, and that nearly 80% of those students were subsequently employed in a position related to their field of study. Those students would not be eligible today.

Stakeholders also reported that some students that do qualify for the PGWP, and other workers already living and working in BC's tech sector, are leaving because of their negative experience with immigration officers, the general process and the limited time of their permits. For example, a number of students overlook the Open Work Permit Holder Fee and then rather than being given a chance to pay for it, the PGWP application is simply refused. When they call the IRCC Call Centre for assistance, they are most often told there is nothing they can do.

PGWPs which are limited to less than a year are of limited value because the student is not able to gain enough Canadian work experience to qualify for the Canadian Experience Class. PGWPs which are issued for one year are also challenging because this pressures the student to find a job immediately after graduating rather than taking their time to find a job that is better suited to their education and skillset. Although students are authorized to start working once they have submitted a PGWP application, many employers are not comfortable hiring students based on a pending application. Employers hesitate to employ without certainty and thus the need for flexibility in the transition period is critical.

Data also show that highly-skilled foreign workers are experiencing delays in receiving permits and visas that make them eligible to work in BC.[68]

64 CBRE Scoring Tech Talent costs ranks Vancouver last of 50 major N. American cities.

65 HR Tech Group, Salary Survey 2016

66 HR Tech Group, Salary Survey 2016

67 2016 TechTalentBC Report

68 2016 TechTalent BC Report Employer Survey

Education Issues

Education includes the activity of education and training by public educational institutions and private sector organizations and includes both formal education and job readiness.

Issue #7:

Lack of engagement by youth in the K-12 system

Technology employers need entry-level employees who are equipped to move the organization's products and services forward. Currently, employers report that they value practical hands-on learning experience to reduce ramp-up time for new grad hires. However, ramp-up time is currently only rated good or very good by less than 60% of tech employers[69].

While the province should be to be applauded for introducing coding as part of the school curriculum, there is an opportunity for technology-focused K-12 programming, similar to the in-class apprenticeship preparatory programs for high school students pursuing trades and other careers.

Participation in subjects that would prepare students for tech careers is low. In fact, BC has the lowest enrolment rate in the four core Grade 12 STEM courses (math, biology, chemistry, and physics) of the provinces that had data available (Alberta, Saskatchewan, and Newfoundland and Labrador)[70], and there has been a 5% decline in Grade 12 students taking at least one STEM course since 2011[71].

Chart 4 **Reduction in Science Fair Participation** (BC)
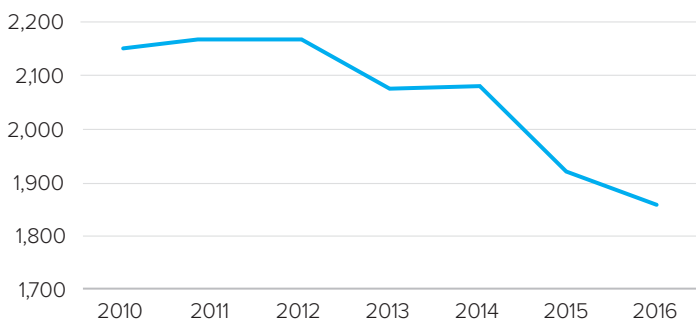
Source: BC Science Fair Foundation

BC's primary and secondary school Science Fair participation is another concern. Only 15% of eligible BC schools participate in science fairs and, as illustrated in Chart 4 to the left, student participation rates have declined by more than 15% since 2010[72]. This downward trend in youth engagement in STEM endangers the longer-term innovation capacity of the workforce.

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69   2016 TechTalentBC Report
70   2016 TechTalentBC Report
71   BC Ministry of Education

72   BC Science Fair Foundation

Issue #8:

Insufficient capacity, access and co-ops in post-secondary

The 2016 TechTalentBC Report indicates that 12,500 more graduates are likely to be needed than BC post-secondary institutions will be able to deliver by 2021[73]. Stakeholders say that these students should come predominately from STEM degree programs[74]. However, students in the K-12 system who are interested in technology are not getting access to post-secondary opportunities. One reason is the high GPA requirement. For example, high school graduates interested in UBC's Computer Science and Engineering need a GPA of 94%[75].

Furthermore, the ratio of current UBC STEM seats versus demand sits at 1:5, reflecting both the huge growth of demand and constrained supply of seats although it must be acknowledged that students will make applications to more than one school. Nonetheless, student demand for Engineering has grown 100% since 2009 at UBC, SFU and U-Vic[76]. Finally, students that are fortunate enough to be accepted to programs are facing an average length of schooling of 6.1 years,[77] partly due to having difficulties accessing the classes they need to complete their degrees[78] in addition to other reasons such as student resources, program/institution capacity, and even the length of some co-op programs.

Chart 5 **Student Demand for Engineering** (BC Universities)
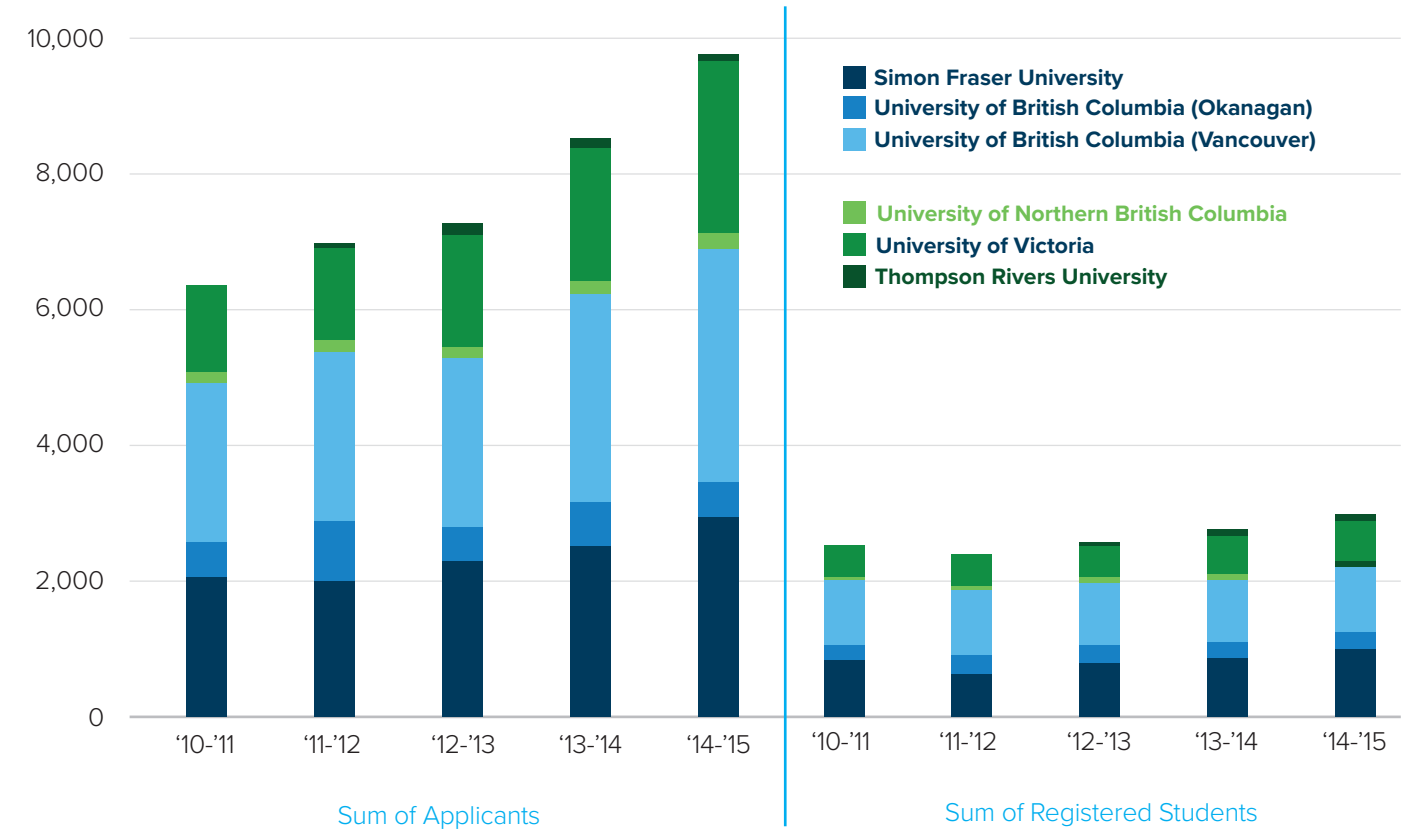
Source: Research University Council of BC

73   2016 BCTechTalent Report
74   LMP Roundtables
75   Jobs and Economic Growth: The Importance of Engineering Education to BC's Economy by James Olson; Research University Council of BC (not publicly available)

76   Research University Council of BC
77   BC Bachelor's Degree Completers of 2013/2014. A Longitudinal Research Study from the Student Transitions Project by Joanne Heslop
78   SFU Undergraduate Student Survey, UBC Okanagan Experience Survey, Thomson Rivers Student Survey

Employers and other stakeholders have stressed the importance of co-op programs as an efficient and effective way to prepare graduates for the workforce. However, of the top tech disciplines at BC's universities, only three program areas (Engineering and Tech, Mechanical and Electrical Engineering, and Biotech and Lifesciences) in 2014 had co-op placements with participation rates over 50%[79]. This contrasts with leading post-secondary instituations in other jurisdictions, such as the Univeristy of Waterloo, where mandatory co-op participation is required for admission to all tech programs, including Software Engineering, Comptuer Engineering, Computer Science, and traditional Engineering.

Co-op program directors in BC have all agreed that the more co-op terms in which their students participate, the greater the likelihood of securing fulltime employment following graduation. In fact, 62% of co-op students secure full-time employment within the first 3 months of graduating[80].

Of course, providing students with more co-op opportunities cannot be done without commitments from the tech sector to place them in meaningful positions. Only 30% of companies with 1-100 employees have a co-op program or employ co-op students[81]. Even though nearly 70% of technology companies hire co-op students, less than 45% hire them on a frequent basis[82]. BC's small and micro-sized tech companies struggle to hire co-ops, in part due to the short duration of co-op periods and the time and resources required, especially for SME's, to train them.

Issue #9:
Upskilling and retraining workers

To meet anticipated demand by 2021, BC will need an additional 9,500 workers, outside university graduates and immigrants. Today, there are no data available to help us understand the number of potential job transitioners and underrepresented group members in the BC labour force who would be interested in a technology career. However, stakeholders pointed to mid-career professionals and professionals from underrepresented groups who are looking to change careers as potential source of untapped talent.

The challenge for many stakeholders of smaller technology businesses and entrepreneurs is that many of these programs have made the trades and natural resources the priority and not technology. Furthermore, smaller companies are required to fund the program upfront and get reimbursed later creating a temporary cash-flow crunch for many that can't afford it. The program can also be cumbersome or even too complicated for many small businesses that don't have the resources or expertise in-house for such applications and administration. Regardless of program complexity, the issue remains that non-technical professionals need support in transitioning to more technical roles and technical professionals need more support in training for softer skills to advance their careers.

Source: Don Erhardt

79   2016 TechTalentBC Report
80   2016 TechTalentBC Report
81   HR Tech Group 2016 Survey
82   2016 TechTalentBC Report

Other Issues in the Broader Tech Ecosystem

Below are key foundational issues that were identified by the stakeholder roundtables. Improving on these broader ecosystem issues is also critical to ensuring that BC continues to grow as world-class destination for tech businesses and talent.

Issue #10:

The tech employee's experience in BC

Research shows that tech-savvy talent overwhelmingly gravitates towards highly-livable cities[83]. Smaller tech hubs may not compete directly on the global market; however, they are competing for talent with larger cities in BC, and the larger cities are competing for talent with global hubs, most notably in the U.S. For that reason, companies of all stages of growth, and in hubs at all levels of maturity, recognize that livability impacts their availability of talent.

This was reflected in some of the issues that stakeholders across the province highlighted, from childcare and housing to transportation and internet bandwidth. From a technology worker's perspective, performance in these areas can significantly impact their decision on whether to work in BC, regardless of whether their employer has tackled the other issues in this document. Specific issues are:

- **Childcare**

  Finding available and affordable childcare was a persistent concern. For example, the Vancouver Society of Children Centre is currently reporting a waitlist of 3,200 families that need childcare for children under the age of 5 years of age. BC has enough regulated child care spaces for only 27 per cent of children under 6, and the provincial government's Early Years Strategy will only create room for another 5 per cent of children (at most) by 2021[84]. Other provinces have developed policies to address the issue. The Province of Quebec, which has a subsidized children's daycare, has been able to demonstrate that 70,000 more women (mothers) were induced to participate in the workforce resulting in an increase of 3.8% in female employment, translating to a 1.7% increase in provincial GDP ($5bn+)[85].

- **Housing**

  Employers report that affordable housing continues to be a major challenge. Companies recruiting talent say that potential employees research and learn about the expensive housing in BC, and Vancouver in particular, before the companies even speak with them, making it difficult to discuss the other benefits of working in BC. The sector's relatively low wages, on a globally comparative basis, compound the challenge.

- **Transportation**

  Stakeholders highlighted the need to improve transportation infrastructure to take advantage of emerging opportunities to collaborate more effectively with each other and with large Seattle-based technology companies, such as Microsoft, Boeing Analytics, and Amazon. Border congestion and airport security processes make it difficult for business leaders and employees to travel easily between the relatively close cities.

  The demand for more public transit and more active (e.g. biking and walking) transit alternatives within tech hubs also continues to grow, especially in the larger tech hubs. Companies continue to locate closer to public transit options since existing employees demand it and the proximity helps organizations attract prospective employees[86].

- **Connectivity**

  In some remote BC communities, about 90% of companies have high-speed internet access[87]. However, the majority of these companies share connectivity with the community. This results in far slower connections than the standard experienced in larger cities. The current definition of highspeed is 5mbps, but that is to one location in the community, not each household. By comparison, a citizen of Metro Vancouver has an average of 16mbps. Furthermore, remote communities struggle with the expensive operating costs of high-speed fibre.

83   CBRE Research 2016 Scoring Tech Talent
84   Solving BC's Affordability Crisis in Childcare by Iglika Ivanova, Canadian Centre for Policy Alternatives, 2015
85   Report on the Impact of Quebec's Universal Low-Fee Childcare Program
86   http://www.jll.ca/canada/en-ca/Pages/Rapid-Transit-Index.aspx
87   First Nations Tech Council

Issue #11:

Advocacy and regional collaboration

Technology stakeholders want more coordination in addressing talent-related issues across the province. This includes identifying future opportunities for talent policy and program reforms to support the sector's continued growth.

Technology stakeholders from smaller companies and ecosystems outside Metro Vancouver want to connect with, and in some cases recruit, experienced talent already in Vancouver, given the perceived barriers for a smaller company in a smaller ecosystem to navigate immigration. Many smaller companies also lack the resources to recruit outside their region so are looking to collaborate.

Vancouver is well-connected to the Silicon Valley, and can be an invaluable connector to resources in the Valley, including high-quality talent. However, many stakeholders feel that BC's connections to other global hubs are relatively weak, including Seattle, Boston and hubs in Europe and Asia.

Issue #12:

Lack of data and other information

It is generally accepted among all partners of the Technology LMP that data availability continues to be a challenge. The importance of data, consistent definitions, improved NOCs codes, better NAICs and other relevant information needs to be improved. Currently, the technology ecosystem does not provide sufficient resources for stable ongoing collection, synthesis, analysis and distribution of data and information that can make timely and positive impacts. While this report provides some good information and data for decision making purposes, these data only represent a point in time or a back-cast range of time. Ongoing data collection, synthesis, analysis and distribution are essential to the success of the strategy, but currently remain disparate and infrequent.

Getting to Recommendations & Action

If the BC tech community acts together to resolve the issues identified above, it will develop BC's diverse workforce in a way that will accelerate and sustain the growth of BC's technology companies, its global reputation for innovation and technology and its diversified, sustainable and innovative economy[88].

The issues and recommendations fall within three pillars, mirroring the predominant themes that emerged over the course of the process: Recruitment, Retention, and Education. These also align with the basic steps that a company, or sector, takes to develop its workforce.

Fig. 4

GROWING TECH TALENT IN B.C.
THE THREE PILLARS

RECRUITMENT	RETENTION	EDUCATION
This pillar Includes recommendations that would support industry (companies) in increasing their access to talent, both locally & globally, through marketing, promotion and outreach to key groups	This pillar includes recommendations that would support industry in implementing a variety of programs including career development and HR best practices that encourage tech talent to stay in BC	This pillar includes recommendations that would strengthen and expand technology-related programs in K-12, post-secondary public and private schools to increase the quantity and quality of locally-grown talent

These recommendations all target specific, and in many cases multiple, groups of talent - whether highly-skilled and specialized international talent or diverse, under-represented domestic talent, such as women, First Nations, persons with disabilities, immigrants and older workers. For that reason, the report highlights these relevant groups within the recommendations.

The recommendations take into consideration that companies prioritize hiring talent closer to home, if conditions allow. As discussed earlier, hiring and developing local talent has financial benefits and reduces hiring risks. That's why many of the recommendations directly or indirectly support local talent, for example, through mentorship and knowledge sharing by senior talent from larger companies and hubs, whether within the province or overseas.

As discussed in the previous section, successfully implementing initiatives in these areas also depends on continuing to build a strong, foundational technology ecosystem that strengthens and improves the business environment.

Recommendation Actions
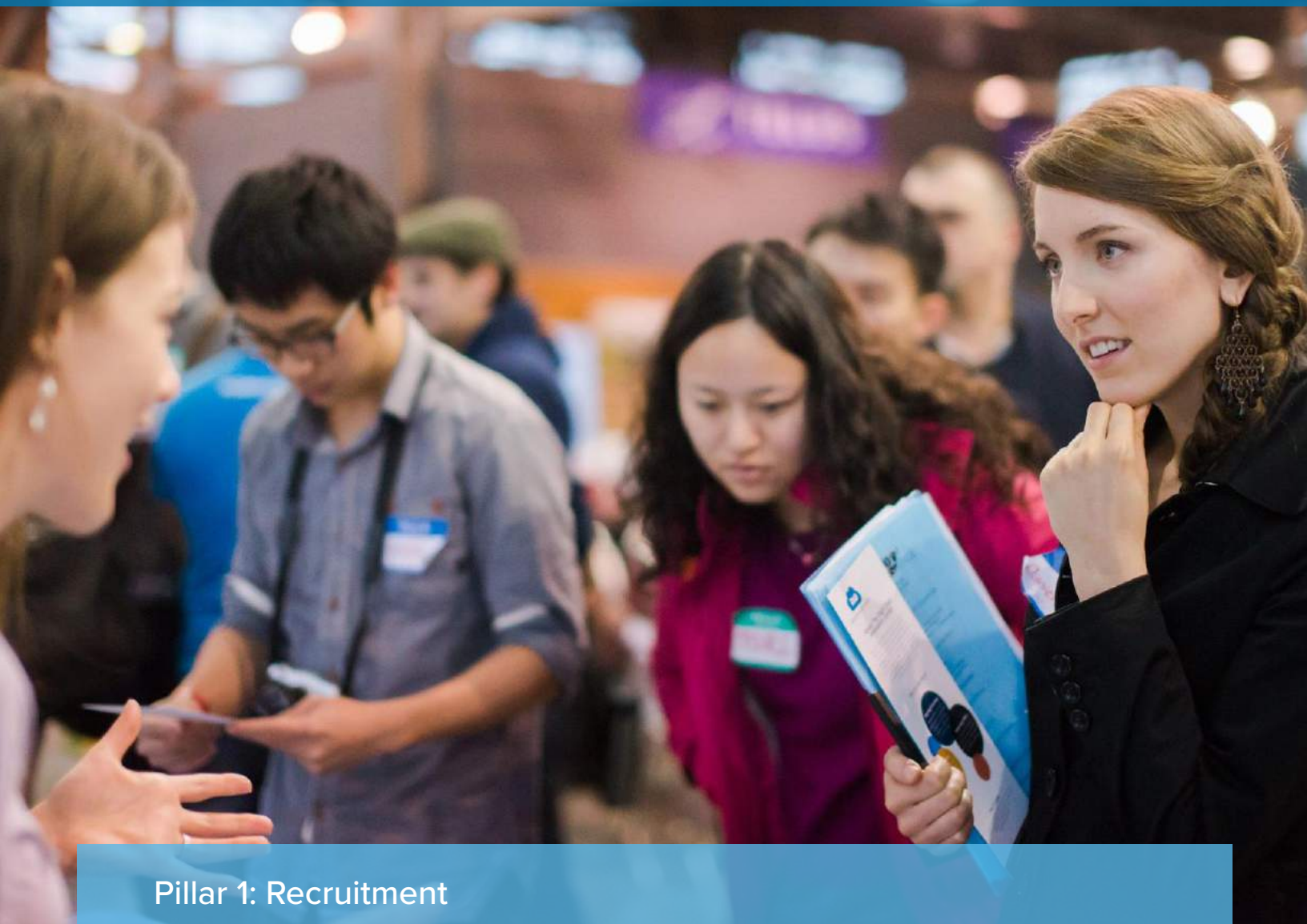
Pillar 1: Recruitment

This pillar outlines initiatives that can support industry in increasing their access to talent, both locally and globally, through marketing, promotion and outreach to key groups and interacting with immigration services.

▶ Maximize the domestic workforce through effective outreach & removal of barriers to entry

▶ Launch coordinated national and global promotional campaigns

▶ Improve immigration policies and processes

1. Maximize the domestic workforce through effective outreach & removal of barriers to entry

Problem Statement
Awareness in BC of opportunities in the tech sector is low, especially among underrepresented groups.

Recommended Approach
Maximize the deployment of the domestic workforce by raising awareness of the growing number and types of technology career opportunities, especially to underrepresented groups in the tech labour force. The industry should promote careers and educate on technology work-styles to these underrepresented groups through a variety of channels, including traditional and digital mediums, as well as direct outreach via the community groups that represent them.

Each of these underrepresented groups are unique and have unique needs. Therefore, promotional campaigns, community outreach, and direct dialogue should be customized with those specific audiences in mind. For example, the industry's relatively flexible work environments may appeal to some women, the ability to work from remote locations may appeal to some First Nations groups, and support for skills development may appeal to some older workers.

The promoting of higher salaries should be complemented with messaging around the provision of skills training to give target audiences confidence that they can qualify for tech careers.

This targeted outreach should be comprehensive, sustained over multiple years and utilize a variety of mediums including:

- Direct print and digital campaigns;
- In-person outreach to diverse and representative community groups;
- Company tours and career fairs;
- Outreach to school districts.

With respect to systemic barriers to entry, some First Nations and other underrepresented groups require the infrastructure to access digital and connected technologies, as well as the ability to pay the associated fees. The following actions should be taken:

- **Improve Connectivity:** Connect First Nations groups and other rural communities that are lacking high speed internet with minimum 50mbps service;
- **Subsidize hardware:** Provide computers to First Nations and certain other underrepresented groups so they can more easily gain access to these employment opportunities such as remote work.

INDUSTRY OBSERVATIONS
Agata Zasada, Director,
People Operations, Hootsuite

"With the technology sector in hyper-growth globally, we need to be looking at talent through a new lens, one which opens the focus beyond the new graduates and current workers, and to those who may enter the workforce from various walks of life. Technology doesn't have the same barriers like former industries. Women, aboriginal & indigenous, people of disabilities and the LGBTQ community are potential untapped talent pools."

2. Launch coordinated national and global promotional campaigns

Problem Statement
There are misperceptions, and a general lack of awareness, across the country and in global tech hubs, about the opportunities in BC to develop a successful tech career. Some companies and organizations promote the opportunities, but not in a coordinated manner that targets the entire ecosystem.

Recommended Approach
Develop and execute coordinated marketing campaigns for both national and international audiences to promote BC career opportunities for the highly-sought-after and highly-experienced global pool of technology talent.

Key elements of this initiative should include:

- Building a multi-year and multi-channel approach that targets key global technology hubs;
- Showcasing BC as a world-class centre for technology innovation, development and commercialization, with a diverse and broad range of specializations across important sub-sectors;
- Targeting Canadian expats should be a priority;
- Promoting BC's lifestyle as healthy, balanced, and diverse, and demonstrate what it is like to work in the BC tech sector with authentic, people-based stories.

Multi-channel options may include print and digital campaigns, company tours, career fairs, free-travel contests, summits and other talent events such as "Vancouver night" or "BC night" at key Canadian consulates, embassies and other desired locations.

Global technology hubs include Boston, Seattle, the Bay Area, Austin, London, Tel Aviv and Berlin, but further research should be conducted to determine the best tech hubs to target (based on prospective talent, not companies).

Key messaging and supporting collateral should also be developed for BC tech companies to leverage for their own national and global recruiting efforts. The complete spectrum of technology companies should be represented, from start-ups to enterprise-level to Fortune 500 companies.

Finally, nontechnical roles such as sales and marketing, product management and project management should not be neglected in these campaigns, either.
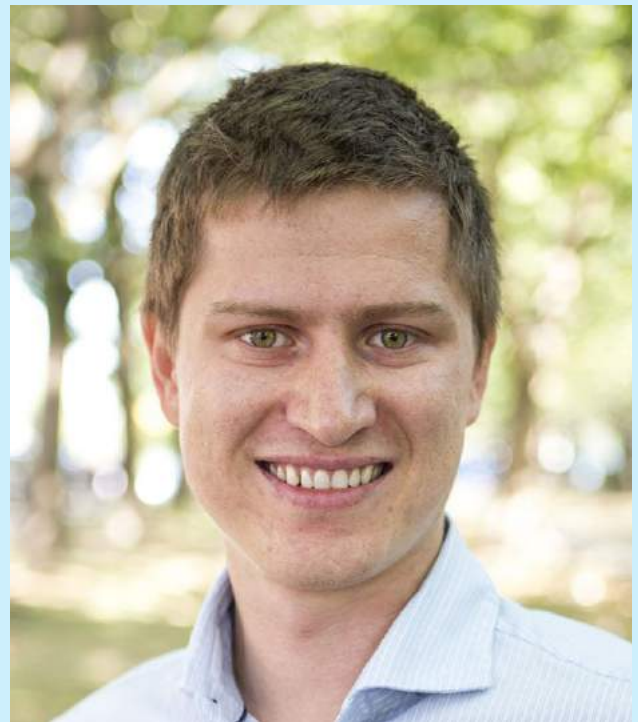
INDUSTRY OBSERVATIONS
Ilya Brotzky, CEO & Founder, Vanhack

"At VanHack, we've helped companies such as EA Games, Shopify, Lululemon, Amazon and many more hire over 110 developers, designers and digital marketing professionals from around the world. Our goal is to fuel BC's tech community with a pipeline of top notch international tech talent that is excited about working in our amazing province. We hope that this report underscores just how much potential there is to positively impact our local economy by attracting the best from around the globe to it."

3. Improve immigration policies and processes

Problem Statement
Large companies often struggle to navigate the processes of various immigration programs in their bid to source international talent within a useful timeframe. Small companies are reluctant to look to immigration for their talent needs, given their limited resources.

Recommended Approach
Amend current policies to attract and process the necessary number of highly-skilled foreign workers within shorter timeframes and with fewer resources.

Many of the immigration issues have been a challenge for years and the Vancouver Economic Commission took the lead in presenting solutions to the HUMA parliamentary committee in Ottawa, that was reviewing the Temporary Foreign Workers Program in the Summer 2015 (see details in Appendix #3). The industry continues to work with both federal and provincial governments to further these causes, including:

- **Faster processing:** low-risk, highly skilled temporary workers need to have their work permits and visa applications priority processed in 2 weeks (compared to 4-20+ weeks for current visa office processing throughout the world).

- **Work permit exemptions:** foreign workers who enter Canada to work for short durations and represent low risk to the Canadian labour market should be allowed to work without a work permit.

- **Supporting multinationals:** a dedicated service channel for immigration support for prospective and already-landed global technology companies in BC that can demonstrate labour market benefits, such as increasing investments, knowledge transfer and Canadian job creation (with the goal of significantly decreasing processing times from 3-5+ months for LMIA applications, in many cases).

- **Raise awareness of the benefits of the Temporary Foreign Workers Program** (TFWP). There is an opportunity to engage the public on the value of the program, which is designed to target highly-skilled workers who facilitate employment opportunities for less experienced Canadians. There's also opportunity to make some program changes that would support this campaign.

- **Create an overarching LMIA exemption for technology occupations**, where global skills and regional labour market outlook warrant. This would support existing public and private investment and protect Canada's economic interests in continuing to attract high-value businesses to Canada. Clearly defined parameters should be set to prevent excessive reliance on the exemption, such as wage minimums and/or specific occupations.

INDUSTRY OBSERVATIONS
Michelle Grady, SVP Productions, Sony Imageworks

"A quick and responsive immigration system is an absolute necessity for the continued success of our sector. We hire crew in large numbers and on short timelines. There is not yet enough talent locally to fulfill the demand, so accessing international talent is essential."

INDUSTRY OBSERVATIONS
Ian Crosby, Co-Founder & CEO, Bench

"Last year at Bench we were able to more than double our business, hiring over 150 new employees in our Vancouver headquarters. But we faced serious challenges in recruiting key executive talent. In the fast-moving tech industry, getting delayed for months on critical projects waiting for executive-level roles to be filled can be the difference between winning and losing. Speed is the difference between becoming Google, or being bought by Google."

Recommended Approach Continued

- **Create a separate IRCC or ESDC channel for expediting highly skilled workers**. For example, create a program such as the Trusted Employer (in place in UK, Ireland, Sweden, and Australia and being piloted in the U.S.) or a pilot program for the tech sector, with requirements similar to the IT Technology Pilot Program. That program allowed employers to submit simplified Labour Market Opinion applications under specific occupations without demonstrating Canadian recruitment, and guaranteed 1-3 day processing by an appointed Officer.

- **Increase BC Provincial Nominee Program (PNP) quotas**. BC should continue to advocate for quota increases to the BC PNP. There's an opportunity to better engage the tech community on the program. Indeterminate job requirements should be amended to address the contract / project-based nature of some sub-sector technology work, where there are clear labour market deficits.

- **Update the National Occupation Codes (NOCs) system** to keep up with the fast-evolving nature of technology and incorporate the variable natures and conditions of the roles across provinces and subsectors. Although ESDC has just released the NOC 2016, new technology occupations need to be expanded and the number of new illustrative job titles increased to respond to evolving technological changes (i.e. Cloud Computing/Engineering).

- **Establish an industry liaison or industry-government specialist** to identify and promote appropriate policy changes. The mandate should include: collect and analyze data, escalate immigration cases when required, build a compliance checklist for audits, gather intelligence to inform recruiters and policy makers, establish a tech employer hotline for easy Q&A to resolve issues, and through employer partnership, provide training content for immigration officers (CBSA) so that they better understand unique industry considerations and requirements.

Pillar 2: Retention

This pillar outlines initiatives that can support industry in implementing a variety of programs including career development and implementing HR best practices that encourage our talent to stay in BC.

▶ Facilitate easier integration into the sector and province for underrepresented groups and new immigrants

▶ Support industry in implementing more progressive HR practices

▶ Extend and leverage programs that retain quality foreign talent

4. Facilitate easier integration into the sector and province for underrepresented groups and new immigrants

Problem Statement

Companies cite a lack of relevant services to assist in the critical settlement process for employees who arrive in the province from outside the country. For underrepresented groups, already in BC, being a new entrant into the sector can cause challenges as they struggle to adapt.

Recommended Approach

Increase and promote services that assist new technology talent arriving from outside the country to improve their experience of landing in BC. For underrepresented groups, industry should adopt diversity policies and support programs that can accommodate cultural and gender differences, such as flex time and remote working for those with family obligations, or for those who need to observe certain religious holidays.

Increasing the delivery of workplace programs, and awareness of existing programs, that proactively help underrepresented groups to integrate into the workplace will increase their engagement and promote diversity. However, training for existing tech workers would also foster diversity.

Specific training should include:

- **Cultural integration:** Training for new workers to identify the differences between their own culture and new ones, and to successfully overcome any associated challenges.

- **Cultural sensitivity:** Training for existing employees to raise awareness of different cultures, understand the impacts of their actions on persons from those cultures, develop the skills to overcome cross-cultural misunderstandings and misperceptions and build strong cross-cultural relationships.

- **Diversity policies:** Documented commitments from employers that prevent discriminatory practices and promote equal opportunity for everyone.

- **Online resources:** A central hub that helps employees to find job opportunities for spouses, school information, health services, childcare, housing, language training, and other resources needed to settle in BC more easily.

INDUSTRY OBSERVATIONS
Tarik Sayeed, Parallel Entrepreneur,
Councillor & Business Owner, City of Penticton

"*The role of socio-professional networks will play a key role to integrate and equate high skilled workers. Thereby, leading the path towards resolving the most urgent challenges.*"

5. Support industry in implementing more progressive HR practices

Problem Statement

Many junior tech employees leave the region after they reach a certain level of career maturity, and move to cities or regions with more opportunities for growth. This has worsened the existing deficit of senior-level talent in the province, and made it more difficult to fill that deficit through either domestic or international channels.

Recommended Approach

Support the ability of junior- and mid-level employees to grow their careers in the province. This should be done through:

- **Sector-wide, shared professional development:** Create opportunities for needed professional development by promoting collaboration in training programs, across regional hubs and sub-sectors, to increase accessibility by companies at all growth stages. Examples include management, leadership, and intrapreneurial training, in both hard and soft skills.

- **Reverse recruiting:** Facilitate the continuous employment of project-based and freelance-based talent by promoting their availability between contracts and among similar companies.

- **Mentorship:** Connect seasoned tech professionals with emerging tech professionals to develop necessary skills and maintain the knowledge base of organizations and the ecosystem

- **Salaries and benefits:** Conduct a regular, annualized review of salary levels, in relation to global competition, and create or expand incentive programs for companies and/or talent.

- **Other innovative HR programs:** Introduce HR programs that promote retention of key workers through various life stages. Examples include flexibility of hours for new parents, skills updating for returning parents, support for family time, sabbaticals and exchanges that encourage workers to gain (or give) experience.

INDUSTRY OBSERVATIONS

Allison Rutherford, Executive Director, HR Tech Group

"*Implementing fair and consistent HR policies ensures employees feel valued and respected. How you pay someone, recognize their efforts, provide feedback, and help them develop their career goes a long way to instilling a vibrant and attractive culture at your organization. Losing an employee is costly: average cost of turnover is 3x the employee's salary!* "

6. Extend and leverage programs that retain quality foreign talent

Problem Statement:
Valuable overseas students are being forced to leave the province after their study permits expire. Many high-quality students are unable to work after studying in BC because their educational programs in private institutions were no longer eligible. Stakeholders also reported that some top students have left due to a poor experience with immigration agency staff or the limited duration of their PGWPs.

Recommended Approach
Expand efforts to retain highly-educated foreign technology workers who are already in the province and actively contributing as off campus workers to Canadian businesses, the economy and their communities. This can be done through fou key actions:

- **Expand qualified schools and programs:** Increase the number of eligible post-secondary private institutions and programs through which international students can apply to ensure that foreign students who have been trained in BC can stay and work in BC afterwards. Valuable college diploma programs should be added to the current listing of degree programs.

- **Extend work permits:** Increase the minimum duration of PGWPs to three years to facilitate the transition from study permits to work permits to permanent resident status, make PGWPs renewable where the graduate has not been able to accumulate sufficient Canadian work experience to qualify for an invitation to apply for permanent residence and allow study permits to include co-op and practicum work terms (instead of requiring a separate permit).

- **Improve IRCC service:** Partner to enhance training for agency staff to improve interactions with international students and workers and change their perceptions of IRCC. Encourage the Case Processing Centre in Vegreville to contact the student by email when an item is missing, such as the Open Work Permit Holder Fee, rather than refusing the PGWP application.

- **Allow PGWP applications at Points of Entry:** If CBSA is able to issue PGWPs at border locations, students could avoid the uncertainty for employers created by pending PGWP applications.

INDUSTRY OBSERVATIONS
Eduardo De Martin, Director, Microsoft

"Diversity is the key to innovation. It is the convergence of different perspectives that results in creative solutions when you're making products for the world. For us, the goal is to ensure that the viewpoints of our employees are represented in the development process and in everything we do."

INDUSTRY OBSERVATIONS
Justin Trudeau, Prime Minister of Canada

"Our future success is largely driven by attracting talented people from around the world. Our diversity not only brings its own economic and social rewards, but with Canada's aging population, having a robust effective and efficient immigration system is critical to our long-term economic growth."

Pillar 3: Education

This pillar outlines initiatives that can strengthen and expand technology-related programs in K-12, post-secondary public and private schools to increase the quantity and quality of locally-grown talent. This area was the top-ranked category of recommendations by participants in the research from online engagement.

▶ Expand practical learning and industry-related curriculum in K-12 schools

▶ Increase capacity, access and co-ops of post-secondary institutions

▶ Increase retraining and upskilling

7. Expand practical learning and industry-related curriculum in K-12 schools

Problem Statement
Parents, teachers and students in the K-12 system seem largely unaware of career opportunities in the technology sector. Companies have also reported concerns about youth job readiness, including specific soft and technical skills that can only be acquired through practical or experiential learning.

Recommended Approach
Expose youth throughout the province to practical learning to increase their chances of success in the tech sector after K-12. This includes providing them with expanded and improved hands-on learning opportunities, where youth at all levels of education are exposed to team-based work, project management skills, and networking opportunities. Approaches should include:

- **Increased collaboration with industry:** Coordinate the efforts of industry, the BC Teacher's Federation and the Ministry of Education to ensure that K-12 curriculum reflects industry needs and the future job market. Industry should contribute to pilot programs that are focused on developing skills to accelerate students' personal growth, confidence and job readiness. Industry needs to provide volunteer opportunities for professionals to teach on tech content and tech career potential. Industry should also be involved in teachers' professional development days, career fairs and job clubs to help inform students and parents of the opportunities available.

- **Preparation for apprenticeship:** Develop an in-class component for a high school apprenticeship program in technology to reduce dropout rates from post-secondary technology curriculums. Require measurement of success for high school apprenticeships. Create a high school dual-credit program, where students can be accelerated into the marketplace and confirm what they want to study, to further increase success rates.

- **Increased hands-on learning:** Double the amount of science fair engagement; deliver fun, highly engaging coding camps.

- **Increase computer science courses:** Offer computer science in K-12 schools; allow for high school students to get university credits in year one if they choose to pursue that discipline.

INDUSTRY OBSERVATIONS
Richard Grieve, Senior VP, Finance & Business Affairs, Bardel Entertainment Inc.

"As we continue to work with the public and private schools, we recommend changes to curriculum in order to better align education with the expectations in the workplace. This is a long-term initiative, enabling artists to progress in their development and advance their careers."

8. Increase capacity, access and co-ops of post-secondary institutions

Problem Statement

BC's post-secondary institutions will need to provide thousands more tech graduates by 2021 to meet industry demands, yet interested high school students are being increasingly turned away given the stringent and rising GPA requirements and low seat availability. Employers report that many of the students are not job ready after they do graduate, and participation in co-ops is low.

Recommended Approach

Expand relevant post-secondary opportunities for interested students, and increase the capacity of BC's educational institutions to support the practical skills training necessary for graduates to succeed in the industry, such as those found in successful co-op programs.

This should be done by:

- **Expanding academic capacity:** Increase the number of seats in STEM degree programs in post-secondary institutions, as well as tech-related programs in interactive design, product management, and sales and marketing.

- **Increasing co-op education:** Expand programs to ensure students' job readiness and participation length matches the needs of employers, and increase outreach to industry. Industry and academia need to collaborate to identify the right balance of hands-on learning versus mandatory, practical requirements.

- **Increasing access to non-degree programs:** Increase opportunities, through continuing education, online programs and bootcamps for students who may not be eligible or interested in a traditional degree program to fill immediate labour needs.

9. Increase retraining and upskilling

Problem Statement
Essential skills development opportunities are insufficient for professionals from other industries, recent immigrants, current professionals and other under-represented groups to successfully transition to higher-paying tech careers.

Recommended Approach
Provide ongoing support and enhance foundational training for professionals to succeed once they enter the industry.

This should be done by:

- **Technical training:** Expand opportunities for interested nontechnical graduates to get the training they need to transition into more technical roles; Expand the number of seats to non-technically trained individuals to accommodate professionals who are transferring from other industries, and technically-trained individuals needing professional development; Support bootcamp training formats to serve the real-time needs of employers; Implement just-in-time training programs that are adaptable and quickly and easily accessible; Make existing government-funded training programs more flexible and accessible to increase employee participation.

- **Soft skills training:** Provide training in sales, marketing, product development, intrapreneurship and design for technical professionals and grads; Industry should look for ways to cost-share these programs across the province.

There are opportunities for government to leverage existing private sector programs and services to better support tech companies in BC. Existing programs are already making progress on these issues, but have not been able to scale their efforts.

INDUSTRY OBSERVATIONS
Graham Traux, Nanaimo Roundtable

"There's a high percentage of engineers, developers, PhD's who are extremely technically capable. Their biggest weakness is in entrepreneurial and business skills."

Sustaining the Recommendations

Delivery partners will need to clearly understand the factors that can sustain their programs.

Assuming adoption of the recommendations by industry and government stakeholders, implementation delivery partners will need to clearly understand a variety of factors that can influence their program's capacity for sustainability. While there may be some initial funding available to kick-start the initiative, the partner will need to assess their proposals through a financial sustainability lens for the long-term maintenance and operations of their technology talent initiative or program. A sustainability action plan should be included with each new initiative.

Ideally, the recommended solution becomes a permanent part of the technology ecosystem and has a funding or revenue model that sustains the important program over the longer term. Sustainability in this context means that the program is providing long-term value to the technology ecosystem. Effective governance, competence, accountability, and transparency are all important components.

Partners should seek long-term funding from multiple sources to diversify and reduce risk. Fee-for-service and other revenues streams should be considered, as well. Ultimately, if the program is delivering value and supported by the community, then a value proposition should exist for the funder, investor or buyer.

With respect to oversight on all of the implementation activities, an industry-led advisory committee called the Technology Workforce Development Panel should be formed as a governing body.

Measuring Success

Measuring against baseline metrics will be critical to understanding where to make meaningful impacts over time.

Success looks different for each group of stakeholders and measuring progress over the life of these initiatives will mean coming to agreement on what the core key performance indicators will be. At a high level, the key indicator will simply be the number of new technology workers that are engaged in the BC economy whether they are new entrants from the education system, from another industry or from a foreign country. However, full metrics particular to each initiative will need to be developed by the respective partnerships.

A solid suite of metrics that can be monitored, measured and reported on a regular basis will be key to progress. A governing body such as the afore-mentioned Technology Workforce Development Panel will need to establish standards and guidelines, including clear definitions and the taxonomy of the technology labour occupations. The industry should not underestimate the amount of time or resources this important work will take and the partners that are charged with actual implementation will need to be included in the measuring and reporting framework as well.

Ultimately, solid reporting with sound data collection, synthesis, and analysis will allow for meaningful and impactful moves on the program and policy fronts.

Fig. 5 **Prospective Partners for Implementation**

Recommendation	Lead Partner	Supporting Partner
Recruitment		
1 | Maximize the domestic workforce through effective outreach & removal of barriers to entry	Organizations representing technology sector including economic development organizations and industry associations	Ministry of JTST for policy around barriers
2 | Launch coordinated national and global promotional campaigns	Organizations representing technology sector including economic development organizations and industry associations	Ministry of International Trade
3 | Improve immigration policies and processes	Ministry of JTST , Workforce Development & Immigration Division	Federal Ministry of IRCC
Retention		
4 | Facilitate easier integration into the sector and province for underrepresented groups and new immigrants	Qualified organizations in diversity training and immigration welcome programs	Industry stakeholders
5 | Extend and leverage programs that retain quality foreign talent	Ministry of JTST , Workforce Development & Immigration Division	Federal Ministry of IRCC
6 | Support industry in implementing more progressive HR practices	Qualified organizations in human resources training around best practices deployment	N/A
Education		
7 | Expand practical learning and industry-related curriculum in K-12 schools	Ministry of Education	Industry organizations and the larger technology companies
8 | Increase capacity, access and co-ops of post-secondary institutions	Ministry of Advanced Education	Industry organizations and the larger technology companies
9 | Increase retraining and upskilling	Private and public schools that deliver targeted training programs and certifications	Ministries of JTST, (both LMID and WDID), SDSI and ARR.

The Importance of a Strong Ecosystem

The technology stakeholders that participated in this Sector Labour Market Partnership highlighted the importance of continuing to strengthen certain key foundational elements that build a strong BC economy and create a more livable province.

COLLABORATION CHILD CARE
FUNDING LEADERSHIP
HOUSING **BUILDING COMMUNITY**
TRANSIT INFRASTRUCTURE

While acknowledging the current strength of BC's talent ecosystem, stakeholders highlighted that this can only be sustained if the province continues to invest in areas such as transportation, transit, childcare, housing, and other infrastructure, including high-speed fibre for remote communities. Ultimately, stakeholders said that the strength of this foundation greatly influences the so-called "employee experience" of what it is like to work and live in BC. Stakeholders put forward suggestions, but recommendations for these areas are out-of-scope for this report. Foundational improvements would enhance recruiting and retention efforts across all industry sectors, not just technology.

As an overview, stakeholders emphasized the importance of continuing to develop certain social programs and physical infrastructure fundamentals. In the larger hubs, access to childcare and affordable housing was often discussed. In more remote areas and for underrepresented groups, transit, often connecting them with the larger hubs, and increased internet bandwidth was highlighted. All of the regional tech hubs spoke about access to family healthcare practitioners.

There were also discussions about community collaboration and connectivity, both within BC and between BC and other global hubs. Regional BC hubs often pointed to the benefits of working together, whether sharing knowledge, through mentorship and volunteer opportunities, between companies and hubs of different growth stages, or sharing actual workers, formally or informally, through talent cooperatives – particularly in project-based environments.

In the global context, there was a desire to better connect BC to globally recognised technology and innovation hubs such as Seoul, London, San Francisco, Boston, Berlin, whether through programs with Canadian consulates and embassies, working with the network of BC Trade reps or transitioning the BC Tech Summit from a local conference to a globally recognised summit. Long-distance commuter infrastructure, such as a Coal Harbour to Lake Union flight, a 'nerd bird' from Vancouver to Seattle, and an extension of the proposed high-speed rail to Seattle, would also increase this collaboration.

There was clear consensus that continuing to engage the Provincial and Federal governments on the issues raised will be critical from a policy and program perspective as the technology sector moves forward.

One opportunity is to organize a cross-section of the LMP working groups into one industry-led advisory committee called the Technology Workforce Development Panel. This working group would advocate for the talent needs of the technology sector. This includes the creation and oversight of specialized groups dedicated to the implementation of the prioritized and actionable recommendations and strengthening access to and capacity of under-represented groups. Strong connections to relevant BC and federal government ministries will be critical.

Conclusion

Similar to other global tech hubs, the technology sector is one of the fastest growing industries in BC. Its growth is creating an unprecedented demand for highly-skilled talent – one that BC's supply pool will be unable to meet without increasing supply.

A status quo approach is likely to forfeit tens of thousands of high-paying jobs in the coming years, and inhibit the future growth of the BC economy. Industry stakeholders have come together to address this concern and identify potential solutions.

The recommendations outlined in this report are those actions:

1. Maximize domestic workforce through effective outreach and removal of barriers to entry;
2. Launch coordinated national and global promotional campaigns;
3. Improve immigration policies and processes;
4. Facilitate easier integration into the sector and province for underrepresented groups and new immigrants;
5. Support industry in implementing more progressive HR practices;
6. Extend and leverage programs that retain quality foreign talent;
7. Expand practical learning and industry-related curriculum in K-12 schools;
8. Increase capacity, access and co-ops of post-secondary institutions;
9. Increase re-training and up-skilling.

Overcoming BC's talent challenge so that its businesses will achieve their full potential will be difficult but achievable. The recommendations in this report must be tackled with a collaborative, partnership-based approach, with the long-term in mind. Phase Four of the Sector Labour Market Partnerships focuses on seeking opportunities to partner with industry and government to support implementation initiatives. There are many other options and programs for partnerships outside of the LMP, as well. In the years to come, these recommendations will become important strategic initiatives that will enable the BC economy to become even more globally competitive and exceptionally diverse. New innovations will be commercialized and existing companies will become even stronger.

By 2021, BC could have close to 200,000 residents employed in innovative, creative and sustainable technology roles contributing to BC's GDP and high standard of living. The next five years is our window of opportunity to build a tremendous talent pool of vital importance for all of us.

APPENDIX I

Definition of Technology Subsectors

1.1 2016 TechTalent BC Report: Sectors

ICT Sector

The Information and Communications Technology subsector comprises a diverse range of companies pursuing advances in software, cloud computing, information technology, telecommunications and electronics manufacturing.

ICT is BC's second largest subsector, producing significant employment opportunities in BC. Moreover, the ICT subsector is one that is currently experiencing tight labour market conditions – meaning that the availability of jobs outweighs the availability of workers – caused by a combination of attrition and market expansion. This trend is set to persist until 2025, as forecasted in BC Labour Market Outlook[1], with an emphasis on occupations such as User Support Technicians and Software Engineers.

Life Sciences

A historically strong tech subsector, Lifesciences spans the areas of pharmaceuticals, medical devices, research and testing platforms. Additionally, the Lifesciences subsector has and continues to benefit from strong ties with BC's post-secondary institutions for a stream of junior-level talent, while senior-level talent often tends to need to be sourced from outside of Canada. Lifesciences workers tend to possess a unique combination of scientific, research, engineering and software skills – a specific demand that can lead to talent shortages, even in the most developed markets. On a national level, this subsector suffers from a shortage of talent, with an acute problem at the senior management level; so much so that 40% of Canadian Lifesciences companies have indicated that this shortage of talent has had a major impact on their business[2]. The talent shortage in Lifesciences is also acutely felt in BC, due to the prominence of micro and small companies, focused on early-stage development[3].

IDM

The Interactive and Digital Media subsector has seen continued growth over the past two years, driven by factors including the growing importance of sensors and the Internet of Things, new platform technologies for mobile applications, the mainstream expansion of social media marketing, the emergence of augmented and virtual reality and the proliferation of new consumer experiences in the video game and digital animation segments.

The third most robust of the five technology subsectors in BC, IDM is a quickly-evolving industry, with a need for a consistently adaptable employee base comprising strong technical skills along with heightened communications skills and business acumen. Combined with the fast-paced evolution of technical skills in the subsector, IDM tends to invest more heavily on upgrading employees' current skills[4] – at both the junior and mid-level – as well as relying on international talent to fill gaps.

Clean Tech

As a part of the Province's Climate Action Plan, the green economy has been a focus for growth in new jobs and innovation in BC. Relying heavily on workers with strong engineering and scientific backgrounds, the Cleantech subsector operates largely through the pursuits of alternative energy generation, storage, environmental remediation and resource management systems.

With the highest composition of small and micro-sized companies of any subsector in BC, Cleantech companies function to provide significant efficiencies in a variety of industries including transportation, manufacturing, and power generation. While the Cleantech subsector often sources junior talent directly from post-secondary institutions when available, seasoned senior talent with established experience and a deep knowledge of the field tends to come from outside of Canada, with prominence from the US and Europe[5].

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1   BC 2025 Labour Market Outlook < https://www.workbc.ca/getmedia/00de3b15-0551-4f70-9e6b-23ffb6c9cb86/LabourMarketOutlook.aspx> (2016).

2   BioTalent Canada, "Sequencing the Data : People – Driving Canada's Bio-economy, Labour Market Information Report 2013"
     <https://www.biotalent.ca/sites/biotalent/files/PDF/Sequencing/Sequencing_the_data_ENG_Sept19_2013.pdf > (September 2013).

3   PwC and LifeSciencesBC, "The Life Sciences Sector in BC – Economic Impact Now and in the Future"
     <https://www.pwc.com/ca/en/healthcare-public-sector/assets/2015-10-LifeSciencesBCSectorReport.pdf> (October 2015).

4   House of Commons Canada "The Canadian Entertainment Software Industry" <http://www.parl.gc.ca/content/hoc/Committee/411/CHPC/Reports/RP6044971/chpcrp10/chpcrp10-e.pdf > (April 2013).

5   Analytica Advisors "Canadian Clean Technology Industry Report" <http://www.analytica-advisors.com/assets/file/2015%20Report%20Synopsis%20Final_wcovers.pdf> (2015).

Engineering Services

The Engineering Services subsector includes companies that provide IT, engineering, design and environmental services to the government, industrial and enterprise markets. The most robust of the five technology subsectors, BC has long had a strong base of Engineering Services companies that provide the core capabilities for infrastructure projects relating to the resource, transportation, utilities and government sectors.

The biggest subsector with the highest representation of large and medium sized companies, the average employee age in Engineering Services is higher than all other subsectors. As such, it is estimated that in BC, 1 in 4 Engineering workers will leave the workforce by 2025[6]. This functions to create new senior level vacancies as well as market expansion that creates new junior-level opportunities. Moreover, while some senior-level vacancies can and will continue to be accounted for via interprovincial migration, Engineering Services is a subsector that has relied heavily on immigration in the past, filling up to 40% of roles in the province[7].

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[6] ASTTBC, Asia Pacific Gateway Skills Table, ACECBC, APEGBC, "Engineers, Geoscientists, Technologists and Technicians in BC – BC Regional Outlook 2015-2024" <http://www.lmionline.ca/wp-content/uploads/2015/10/Regional-Outlook-BC-EGTT.pdf> (2015).

[7] Ibid.

APPENDIX II

Master Stakeholder List

2.1 Subcommittees

Stakeholder Types: ■ Committee Members   ■ Ex-Officio

Data Collection & Analysis Subcommittee Chair: Bill Tam, CEO, BCTech Association				
#	First Name	Last Name	Title	Organization	
1	Jonas	Altman	Head of Innovation	Red Academy	■
2	Ken	Armour	Exectuive Director, Policy and Research	Research Universities' Council of BC	■
3	Sam	Bourgi	Consultant	Information and Communications Technology Council	■
4	Jennifer	Buchanan	Manager	CMPA-BC	■
5	Kevin	Chiu	HR Advisor	Westport	■
6	Jeremy	Coad	Director of Knowledge Transfer & commercialization	Ministry of Technology, Innovationa and Citizens' Services	■
7	Patience	Cox	Career and Skills Education Coordinator	Ministry of Education	■
8	Alexandra	Cutean	Research Program Manager	Information and Communications Technology Council	■
9	Korey	Gannon	Senior Talent Advisor	Hootsuite	■
10	Raghwa	Gopel	Chief Executive Officer	Accelerate Okanagan	■
11	Michelle	Grady	Senior Vice Persident	Sony Imageworks	■
12	Kendra	Greek	Program Manager	Ministry of Jobs, Tourism and Skills Training	■
13	Meenakshi	Gupta	Senior Program Director	Information and Communications Technology Council	■
14	Mark	Hawkes	E-Learning Coordinator	BC Ministry of Education	■
15	Chris	Holling	Director of Forecasting	Ministry of Jobs, Tourism and Skills Training	■
16	Rob	Kennedy	Senior Software Developer	Bron Studios	■
17	Cecile	Lacombe	Director, Research & Knowledge Development	Ministry of Technology, Innovation and Citizens' Services	■
18	Bonnie	Lai	Manager, Reasearch and Analytics	BC Innovation Council	■
19	Karen	Lamare	Director, Creative Sector Policy	Ministry of Jobs, Tourism and Skills Training	■
20	Blair	Littler	Vice President	Research Universities' Council of BC	■
21	Lori	MacKenzie	Director, Policy & Research	Research Universities' Council of BC	■
22	Colin	Mansell	Managing Partner	Red Academy	■
23	John	McPherson	Sector Development Manager, Clean Tech	Vancouver Economic Commission	■
24	Rob	Mingay	ADM: Assistant Deputy Minister	Jobs, Tourism and Skills Training	■
25	Patrick	Mooney	General Manager	Zoic Studios	■
26	Trevor	Quan	Analyst	Premier's Technology Council	■
27	James	Raymond	Manager, Research & Analysis	Vancouver Economic Commission	■
28	Andrea	Rempel	HR Manager	Atomic Cartoons	■
29	Feng	Ren	Senior Economist	Ministry of Jobs, Tourism and Skills Training	■

Data Collection & Analysis Subcommittee *Continued*
Chair: Bill Tam, CEO, BCTech Association

#	First Name	Last Name	Title	Organization	
30	Raseel	Sehmi	Strategy & Policy	BC Tech	■
31	Jeremy	Shaki	Chief Talking Officer	Lighthouse Labs	■
32	Ryan	St. Germaine	Chief Executive Officer	BC Jobs	■
33	Bill	Tam	President & Chief Executive Officer	BC Tech	■
34	Eben	Watt	Director, Workforce Mobility	Ministry of Jobs, Tourism and Skills Training	■
35	Sascha	Williams	Chief Operating Officer	Unbounce	■
36	Agata	Zasada	Talent Manager	Hootsuite	■
37	Sandra	Zovko	Senior Analyst	BC Innovation Coucil	■

Diversity & Outreach Subcommittee
Chair: Agata Zasada, Director, Talent Operations Hootsuite & Kathy Gibson, Senior Consultant

#	First Name	Last Name	Title	Organization	
1	Daniela	Abasi	Outreach Program Manager	Simon Fraser University	■
2	Kate	Armstrong	Director	Emily Carr University of Art and Design	■
3	Bryan	Buggey	Director, Strategic Initiatives	Vancouver Economic Commission	■
4	Amber	Chow	Human Resources Administrator	Image Engine Design	■
5	Susan	Chrichton	Director Faculty of Education	UBC	■
6	Leslie	Collin	Manager of Talent & Culture	Unbounce	■
7	John	Coward	Member, stand in for John Leech	ASTTBC	■
8	Alexandra	Cutean	Research Program Manager	Information and Communications Technology Council	■
9	Hana	Doubrava	Corporate Affairs Director	Microsoft	■
10	Bethany	Foote	Director	Hootsuite	■
11	Amanda	Fox	Recruitment	Westport	■
12	Brenda	Gilbert	President	Bron Studios	■
13	Kendra	Greek	Program Manager	Ministry of Jobs, Tourism and Skills Training	■
14	Meenakshi	Gupta	Senior Program Director	Information and Communications Technology Council	■
15	Roula	Lainas	Producer	Zoic Studios	■
16	John	Leech	Chief Executive Officer	ASTTBC	■
17	Emily	Lewis	Workforce Mobility	Ministry of Jobs, Tourism and Skills Training	■
18	Cong	Ly	Software development	Hootsuite	■
19	Sarah	McNair	Senior Director	DHX Media	■
20	Rob	Mingay	Assistant Deputy Minister	Ministry of Jobs, Tourism and Skills Training	■
21	Marta	Mintenko Knapik	Talent Manager: Development, Academia & Diversity	BC Tech	■
22	Denise	Mullen	Director, Environment & Sustainability	Business Council of BC	■
23	Susan	Ogilvie	Manager, Communications & External Affairs	LifeSciences BC	■

Diversity & Outreach Subcommittee *Continued*
Chair:

#	First Name	Last Name	Title	Organization	
24	Monique	Orieux	Associate	Fasken Martineau DuMoulin	■
25	Kevin	Poole	Economic Development Officer	City of Vernon	■
26	Jody	Rebak	Partner & Corporate Development	AxiomZen	■
27	Lauren	Robinson	Global Operations Director	Highline	■
28	Raseel	Sehmi	Strategy & Policy	BC Tech	■
29	Briana	Sim	Co-founder & Chief Operating Officer	Radical I/O Technology	■
30	Lee	Taal	Founder	ChatterHigh	■
31	Alice	Tuxford	Recruitment Manager	Double Negative	■
32	Rikka	Vassal	HR Manager	Image Engine Design	■
33	Eben	Watt	Director, Workforce Mobility	Ministry of Jobs, Tourism and Skills Training	■
34	Christin	Wiedemann	President	Society for Canadian Women in Science and Technology	■
35	Denise	Williams	Executive Director	First Nations Tech Council	■
36	Agata	Zasada	Director, Talent Operations	Hootsuite	■

Immigration Subcommittee
Chair: Michelle Grady, Senior VP, Sony Imageworks

#	First Name	Last Name	Title	Organization	
1	Sohee	Ahn	Executive Director, Technology Strategy	Ministry of Technology, Innovation & Citizens' Services	■
2	Sharon	Batchelor	Director of HR	Klohn Crippen Berger	■
3	Marc	Belanger	HR	Digital Domain	■
4	Ilya	Brotzky	Chief Executive Officer	VanHack	■
5	Bryan	Buggey	Director, Strategic Initiatives	Vancouver Economic Commission	■
6	Steve	Crozier	Talent Specialist	Relic Entertainment	■
7	Alexandra	Cutean	Research Program Manager	Information and Communications Technology Council	■
8	Hana	Doubrava	Corporate Affairs Director	Microsoft	■
9	Robert	Fine	Director of Business	City of Kelowna	■
10	Diane	Gardiner	Vice President, Human Resources	ProNAi Therapeutics	■
11	Sam	Ghare	Operations	AxiomZen	■
12	Raghwa	Gopal	Chief Executive Officer	Accelerate Okanagan	■
13	Michelle	Grady	Senior Vice President	Sony Imageworks	■
14	Kendra	Greek	Program Manager	Ministry of Jobs, Tourism and Skills Training	■
15	Scott	Hanley	HR Generalist	Bardel Entertainment Inc.	■
16	Miki	Hara	HR	Zoic Studios	■
17	Jake	Hirsch-Allen	Senior Relationship Manager	Lynda Academic	■
18	Bill	Jeffrey	Policy Analyst, temporary Foreign Workers Program	Employment and Social Development Canada	■
19	Bonnie	Lai	Manager, Reasearch and Analytics	BC Innovation Council	■

Immigration Subcommittee *Continued*
Chair: Michelle Grady, Senior VP, Sony Imageworks

#	First Name	Last Name	Title	Organization	
20	Jan	Laishley	Manager of HR	Ballard	■
21	Sean	Langan	Senior HR Business Parnter	Stemcell	■
22	Emily	Lewis	Workforce Mobility	Ministry of Jobs, Tourism and Skills Training	■
23	Danielle	Lovell	Co Founder & Chief Operating Officer	Blankslate	■
24	Aireen	Luney	Manager, Program Development & Promotion	Ministry of Jobs, Tourism and Skills Training	■
25	Emma	MacNeill	Talent Manager Specialist	Appnovation	■
26	Susan	Martyn	Senior Immigration Lawyer	PwC	■
27	Elaine	McAnally	People Operations Manager	Hootsuite	■

Job Readiness Subcommittee
Chair: Dean Prelazzi, Managing Director, BC Innovation Council

#	First Name	Last Name	Title	Organization	
1	Sohee	Ahn	Executive Director, Technology Strategy	Ministry of Technology, Innovation & Citizens' Services	■
2	Ken	Armour	Exectuive Director, Policy and Research	Research Universities' Council of BC	■
3	Debbie	Bennett	Acting HR Manager	Double Negative	■
4	Matthew	Bongiorno	Senior Advisor	Mitacs	■
5	Bryan	Buggey	Director, Strategic Initiatives	Vancouver Economic Commission	■
6	David	Cameron	Executive Director	Young Entrepreneur Leadership Launchpad	■
7	Raj	Chahal	HR Generalist	Sophos	■
8	Dennis	Chenard	Director of Industry Relations	The CDM	■
9	Patience	Cox	Career and Skills Education Coordinator	Ministry of Advanced Education	■
10	Ian	Crosby	Chief Executive Officer	Bench	■
11	Alexandra	Cutean	Research Program Manager	Information and Communications Technology Council	■
12	Charlyne	Fothergill	Director of Career Services	Lighthouse Labs	■
13	Paris	Gaudet	Executive Director	Innovation Island Technology Association	■
14	Fabiana	Gennari	Learning Development Partner	Sophos	■
15	Kendra	Greek	Program Manager	Ministry of Jobs, Tourism and Skills Training	■
16	Mark	Hawkes	e-Learning Chief Operating Officerrdinator	Ministry of Education	■
17	Jake	Hirsch-Allen	Senior Relationship Manager	Lynda Academic	■
18	Christina	Hirukawa	Director of Development	The Next Big Thing	■
19	Matt	Hutcheon	Executive Director	Innovation Central	■
20	Bonnie	Lai	Manager, Reasearch and Analytics	BC Innovation Council	■
21	Wajida	Leclerc	Senior Vice Persident - HR	ZymeWorks	■
22	Tony	Loughran	Executive Director; Research & Health Programs	Ministry of Advanced Education	■

Job Readiness Subcommittee *Continued*
Chair: Dean Prelazzi, Managing Director, BC Innovation Council

#	First Name	Last Name	Title	Organization	
23	Louise	Lund	Scientific Recruiter	Stemcell	■
24	Melody	Ma	Senior Product Manager and Marketer, Web Developer	MEC	■
25	Gwyn	MacGregor	Program Manager	Industry Trainign Authority	■
26	Colin	Mansell	Managing Partner	Red Academy	■
27	Emma	McGonigle	HR Manager	Double Negative	■
28	Stephane	Morichere-Matte	Senior Program Manager	Microsoft	■
29	Jerome	Pimmel	Engineering Manager	Amazon	■
30	Dean	Prelazzi	Managing Director	BC Innovation Council	■
31	Trevor	Quan	Lead Analyst	Premier's Technology Council	■
32	Jenny	Rodgers	Head of Human Resources	Moving Picture Company	■
33	Christina	Seargeant	HR Business Partner	Workday (Vancouver Island)	■
34	Raseel	Sehmi	Strategy & Policy	BC Tech	■
35	Paul	Shorthouse	BC Regional Director	Delphi	■
36	Briana	Sim	Co-founder & Chief Operating Officer	Radical I/O Technology	■
37	Elizabeth	Sun	Membership & Sponsorship Manager	LifeSciences BC	■
38	Lee	Taal	Founder	ChatterHigh	■
39	Corey	Wagner	Co-Founder	Bananatag.com	■
40	Eben	Watt	Director, Workforce Mobility	Ministry of Jobs, Tourism and Skills Training	■
41	Denise	Williams	Executive Director	First Nations Tech Council	■

Recruitment & Retention Subcommittee Meeting Record
Chair: Sascha Williams, COO, Unbounce

#	First Name	Last Name	Title	Organization	
1	Sharon	Batchelor	Director of HR	Klohn Crippen Berger	■
2	Sarah	Breen	Applied Research - Faculty Assistant	Selkirk College	■
3	Raj	Chahal	HR Generalist	Sophos	■
4	Alex	Chapple	Director of Workforce Success & Recruitment	Thoughtexchange	■
5	Penny	Chong	HR Director	Microsoft	■
6	Paul	Cowles	Development Director	Hootsuite	■
7	Alexandra	Cutean	Research Program Manager	Information and Communications Technology Council	■
8	Jacqueline	de Raadt	Manager, Executive Initiatives	ASTTBC	■
9	Izzie	Egan	Chief Executive Officer	Blankslate	■
10	Patrick	Farrar	Chief Operating Officer	Venture for Canada	■
11	Amanda	Fox	Recruiter	Westport	■
12	Fabiana	Gennari	Learning Development Partner	Sophos	■
13	Brenda	Gilbert	President	Bron Studios	■

Recruitment & Retention Subcommittee Meeting Record *Continued*
Chair: Sascha Williams, COO, Unbounce

#	First Name	Last Name	Title	Organization	
14	Kendra	Greek	Program Manager	Ministry of Jobs, Tourism and Skills Training	■
15	Tara	Kemes	Vice President	Rainmaker Entertainment	■
16	Wajida	Leclerc	Senior Vice Persident - HR	ZymeWorks	■
17	Vicky	Leong	HR	Bardel Entertainment Inc.	■
18	Lori	MacKenzie	Director, Policy & Research	BC Association of Institutions & Universities	■
19	Terry	Matthews	Account Manager, Employer Relations	University of Waterloo	■
20	Marta	Mintenko Knapik	Talent Manager: Development, Academia & Diversity	BC Tech	■
21	Brad	Nichol	Director, HR	Westport	■
22	Sophie	O'Donoghue	HR Chief Operating Officerrdinator	Sophos	■
23	Susan	Ogilvie	Manager, Communications & External Affairs	LifeSciences BC	■
24	Andrea	Rempel	HR Manager	Atomic Cartoons	■
25	Annika	Rienhardt	Social Impact - Community Engagement	Social Bites	■
26	Allison	Rutherford	Executive Director	HR Tech Group	■
27	Raseel	Sehmi	Strategy & Policy	BC Tech	■
28	Helen	Sheridan	Vice President of HR	Stemcell	■
29	Briana	Sim	Co-founder & Chief Operating Officer	Radical I/O Technology	■
30	Scott	Stirrett	Executive Director	Venture for Canada	■
31	Richard	Takai	Founder	RoninHR Inc.	■
32	Judith	Thompson	Director of HR	LivaNova Canada Corp.	■
33	Kyle	Treleaven	General Manager - Vancouver	Brainstation	■
34	Louise	Turner	President	Premier's Technology Council	■
35	Kirsten	Twidale	Policy Analyst	Government of Canada	■
36	Manu	Varma	VP of HR	Traction on Demand	■
37	Eben	Watt	Director, Workforce Mobility	Ministry of Jobs, Tourism and Skills Training	■
38	Christin	Wiedemann	President	Society for Canadian Women in Science and Technology	■
39	Sascha	Williams	Chief Operating Officer	Unbounce	■
40	Robert	Wong	Vice President	Creative BC	■

2.2 Regional Attendees

Stakeholder Types: ■ Roundtable Participants   ■ Ex-Officio

Victoria Regional Roundtable				
#	**First Name**	**Last Name**	**Title**	**Organization**	
1	Isaac	Abdella	Self Employed	Self Employed	■
2	Sohee	Ahn	Executive Director, Technology Strategy	Ministry of Technology, Innovation & Citizens' Services	■
3	Thomas	Ahn	Chief Executive Officer	Mad Ventures	■
4	Erin	Athlene	Victoria Chapter Lead	Ladies Learning Code	■
5	Donna	Chow	Chief Executive Officer	Amz Bls	■
6	Yvonne	Coday	Computer Science - Faculty of Engineering	University of Victoria	■
7	Patience	Cox	Career and Skills Education Coordinator	Ministry of Education	■
8	Alexandra	Cutean	Research Program Manager	Information and Communications Technology Council	■
9	Rebeca	Espirito Santo	HR & Communications Coordinator	LlamaZoo	■
10	Linley	Faulkner	Co-founder	Emplomacy	■
11	Kendra	Greek	Program Manager	Ministry of Jobs, Tourism and Skills Training	■
12	Colin	How	Advisor	Straw House Labs, YogiTunies, TicketRocket	■
13	Angie	Jackson	Talent Acquisition Business Partner	CGI	■
14	Derek	Jacoby	President	MakerSpace	■
15	Eric	Jordan	Chief Executive Officer	Codename Entertainment	■
16	Shrawan	Khanna	Recruiting Manager	Edward Daniels Group, Inc.	■
17	Cecile	Lacombe	Director, Research & Knowledge Development	Ministry of Technology, Innovation and Citizens' Services	■
18	Twyla	Magnus	Information Technology Resources & Development Advisor	BC Ferry Services Inc.	■
19	Andrew	Mathews	Human Resources Business Partner	CGI	■
20	Shannon	Renault	Director, Sector & Project Based Programs	Ministry of Jobs, Tourism and Skills Training	■
21	Katie	Reynolds	Talent and Culture Manager	Go2mobi	■
22	Carl	Ropp	Chief Operating Officer	ChatterHigh	■
23	Christina	Seargeant	Human Resource Business Partner	Workday	■
24	David	Shortreed	Technology Learning Lead	Victoria School District	■
25	John	Walmsley	Vice President Product Development	StarFish Medical	■
26	Noah	Warder	People Operations Manager	Send With Us	■
27	Eben	Watt	Director, Workforce Mobility	Ministry of Jobs, Tourism and Skills Training	■

Kelowna Regional Roundtable

#	First Name	Last Name	Title	Organization	
1	Delna	Bhesania	Chief Executive Officer	Bardel Entertainment Inc. - Kelowna	■
2	Craig	Broderick	Economic Development	City of Vernon	■
3	Myles	Bruns	Regional Manager	Ministry of Jobs, Tourism and Skills Training	◻
4	Alexandra	Cutean	Research Program Manager	Information and Communications Technology Council	■
5	Sean	Elbe	Sector Development Manager, Technology	Vancouver Economic Commission	■
6	Robert	Fine	Director of Business	City of Kelowna	■
7	Kendra	Greek	Program Manager	Ministry of Jobs, Tourism and Skills Training	◻
8	Janice	Larson	Executive Director, Regional Innovation Initiatives	Ministry of Technology, Innovation & Citizens' Services	◻
9	Krista	Mallory	Business Development Officer	Central Okanagan Economic Development Commission	■
10	Karen	Olsson	Chief Operating Officer	Community Sift	■
11	Ashley	Ramsay	Chief Executive Officer	Yeti Farms Creative	■
12	Jenny	Rodgers	Head of Studio	Moving Picture	■
13	Joe	Schober	Studio Manager	Bardel Entertainment Inc. - Kelowna	■
14	Ingrid	Takai	Tech Recruiter	Ronin HR	■
15	Jennifer	Tedman-Jones	Director of Business Development	Ministry of Technology, Innovation & Citizens' Services	◻
16	Kevin	Tucker	Human Resources	FreshGrade	■
17	Drew	Vincent	Team Leader	OYP Collective	■
18	Corey	Wagner	Co-Founder	Bananatag	■
19	Eben	Watt	Director, Workforce Mobility	Ministry of Jobs, Tourism and Skills Training	◻
20	James	Weir	Investment Consultant	Investors Group	■
21	Jeff	Wimmer	Director of Human Resources	QHR Technologies Inc.	■

Prince George Regional Roundtable

#	First Name	Last Name	Title	Organization	
1	Melissa	Barcellos	Manager, Economic Development	City of Prince George	■
2	Mark	Barnes	Assistant Director Research	University of Northern BC	■
3	Monica	Berra	Technology Learning Lead	Prince George School District	■
4	Bradley	Bowness	Chief Information Officer	College of New Caledonia	■
5	Christina	Doll	Workforce Development Officer	City of Prince George	■
6	Matthew	Ewen	Lead, Northern Sport Accessibility Initiative	viaSport	■
7	Shauna	Harper	Digital Marketing Strategist	Live Work Communications	■
8	Matt	Hutcheon	Executive Director	Innovation Central	■

Kamploops Regional Roundtable				
#	**First Name**	**Last Name**	**Title**	**Organization**	
1	Nancy	Bepple	Co-op Coordinator: Computing Science/Engineering/Math/Physics	Thompson Rivers University	■
2	Myles	Bruns	Regional Manager	Ministry of Jobs, Tourism and Skills Training	■
3	Derek	De Candole	Business Attraction Specialist	Venture Kamloops	■
4	Erin	Handy	Executive Director	Kootenay Association for Science & Technology	■
5	Rose	Hoeher	Innopreneur Director	Kootenay Association for Science & Technology	■
6	Sadie	Hunter	Director of Development, Faculty of Science and School of Nursing	Thompson Rivers University	■
7	Paul	Johansen	Commercialization Strategist	Self Employed	■
8	Calum	Lloyd	Business Analyst	Thompson Country Community Futures	■
9	Colin	O'Leary	Manager, Business Retention and Expansion	Venture Kamloops	■
10	Lincoln	Smith	Executive Director	Kamloops Innovation	■
11	Kimberly	Steadman	Operations Manager	Kamloops Innovation	■
12	Eben	Watt	Director, Workforce Mobility	Ministry of Jobs, Tourism and Skills Training	■

Nanaimo Regional Roundtable				
#	**First Name**	**Last Name**	**Title**	**Organization**	
1	Susan	Allen	Manager, Professional Development and Training	Vancouver Island University	■
2	Talya	Christbason	Director	Ministry of Education	■
3	Mark	Dutchuk	Instructor	Vancouver Island University	■
4	Ivan	Eggers	Business Analyst and Project Manager	Resonance Software	■
5	Kent	Flint	Vice President, Human Resources	Real Estate Webmasters	■
6	Paris	Gaudet	Executive Director	Innovation Island Technology Association	■
7	John	Hankins	Chief Executive Officer	Nanaimo Economic Development	■
8	Katie	Jones	Business Analyst	Resonance Software	■
9	Rose	Klukas	Economic Development Officer	Campbell River Economic Development Corporation	■
10	Jesse	Magee-Chalmers	Associate Dean	Vancouver Island University	■
11	Cheryl	McLay	Regional Manager	Ministry of Jobs, Tourism and Skills Training	■
12	Tom	Mitchell	Senior Tech Stakeholder & Generalist	Self Employed	■
13	Chelsea	Pedersen	Program Assistant	Innovation Island	■
14	Tom	Rothoehler	Senior Technical Support Specialist	City of Nanaimo	■
15	Graham	Truax	Executive in Residence	Innovation Island Technology Association	■

		Frase Valley Regional Roundtable			
#	**First Name**	**Last Name**	**Title**	**Organization**	
1	Bob	Andrews	Economic Development	Township of Langley	■
2	Shannon	Baird	Senior Account Manager, Generalist	Business Develempent Bank of Canada	■
3	Lindsay	Bisschop	Regional Manager/Economic Development	Ministry of Jobs, Tourism and Skills Training	■
4	Christopher	Bush	Sustainable Agriculture Pioneer	Agricultural Centre of Excellence in Sustainability	■
5	Stacey	Crawford	Economic Development Officer	District of Mission	■
6	Wendy	Dupley	Economic Development	City of Abbotsford department of Economic Development	■
7	Colleen	Hannah	Principal, Aboriginal Education	Mission Public School District	■
8	Wim	Kerkhoff	President	Kerkhoff Technologies	■
9	David	Leger	Founder & Director	Loop Energy	■
10	Shawn	Neumann	Founder & Chief Executive Officer	Domain 7 Solutions	■
11	Kim	O'Sullivan	Acting Economic Development Coordinator	City of Abbotsford	■
12	Wade	Peary	Principal	Riverside College	■
13	Jeremy	Penner	People and Culture Specialist	Domain 7 Solutions	■
14	Pia	Ritch	Director of Programming	Mission Community Skills Centre Society	■
15	Robert	Roker	Technologist, Analyst, Entrpreneur	SRCTec	■
16	Dennis	Rook	General Manager	Community Futures	■
17	Jo-Ann	Scott	Senior Human Resources Manager	Kinetics Drive Solutions Inc.	■
18	Clare	Seeley	Economic Development Department	District of Mission	■
19	Kal	Sidhu	Account Manager	First Page	■
20	Raymond	Szabada	Chairman of Board/Founder	Sumas Regional Consortium of High Tech	■

2.3 Other Key Stakeholder Meetings

Stakeholder Types: ■ Industry Stakeholders ■ Ex-Officio

Municipal, Economic Development, and Technology Association / Society Engagements				
#	**First Name**	**Last Name**	**Title**	**Organization**
1	Jim	Andersen	Executive Director	Venture Kamloops	■
2	Bob	Andrews	Economic Development	Township of Langley	■
3	Ken	Armour	Exectuive Director, Policy and Research	Research Universities' Council of British Columbia	■
4	Joshua	Bach	President	Abbotsford Chamber of Commerce	■
5	Ken	Baerg	Economic Development Officer	City of Abbotsford	■
6	Susan	Bahry	Director, Human Resources	City of Abbotsford	■
7	Melissa	Barcellos	Manager, Economic Development	City of Prince George	■
8	Dustyn	Baulkham	Workforce Development Officer	Central Okanagan Economic Development Commission	■
9	Chris	Beaton	Executive Director	Nanaimo Aboriginal Centre	■
10	Michael	Boronowski	Manager Civic & Corp. Initiatives	District of Mission	■
11	Sam	Bourgi	Author, Research Associate	Information and Communications Technology Council	■
12	Craig	Broderick	Economic Development	City of Vernon	■
13	Jennifer	Buchanan	Manager	Canadian Media Producers Association	■
14	Bryan	Buggey	Director	Vancouver Economic Commission	■
15	Christopher	Bush	Sustainalbe Agriculture Pioneer	Agricultural Centre of Excellence in Sustainability	■
16	David	Cameron	Executive Director	Young Entrepreneur Leadership Launchpad	■
17	Ange	Chew	Tourism	City of Vernon	■
18	Brian	Coombes	President & Chief Executive Officer	Chilliwack Economic Partners Corporation	■
19	Stacey	Crawford	Economic Development Officer	District of Mission	■
20	Alexandra	Cutean	Research Program Manager	Information and Communications Technology Council	■
21	Derek	De Candole	Business Attraction Specialist	Venture Kamloops	■
22	Pat	Deakin	Economic Development	City of Port Alberni	■
23	Nadine	Diner	Industry Initiatives Director	BC Innovation Council	■
24	Garrison	Duke	Director of Employment	Abbotsford Works	■
25	Wendy	Dupley	Economic Development	City of Abbotsford	■
26	Pauline	Edwards	Executive Assistant	First Nations Tech Council	■
27	Sean	Elbe	Sector Development Manager, Technology	Vancouver Economic Commission	■
28	Colin	Ewart	President	BC Colleges Association	■
29	Robert	Fine	Director of Business	City of Kelowna	■
30	Paris	Gaudet	Executive Director	Island Innovation Technology Association	■
31	Kathy	Gibson	Senior Consultant	Vancouver Economic Commission	■
32	Prem	Gill	Chief Executive Officer	Creative BC	■
33	Raghwa	Gopal	Chief Executive Officer	Accelerate Okanagan	■
34	Corrie	Griffiths	Economic Development Manager	Central Okanagan Economic Development Commission	■
35	Dan	Gunn	Chief Executive Officer	VIATEC	■

Municipal, Economic Development, and Technology Association / Society Engagements *Continued*				
#	**First Name**	**Last Name**	**Title**	**Organization**	
36	Meenakshi	Gupta	Senior Program Director	Information and Communications Technology Council	■
37	Erin	Handy	Executive Director	Kootenay Association for Science & Technology	■
38	John	Hankins	Chief Executive Officer	Nanaimo Economic Development	■
39	Amber	Hayes	MIDAS Project Director	Kootenay Association for Science & Technology	■
40	Allison	Hicks	Human Resources & Talent Development Manager	BC Tech	■
41	Keenen	Hopson	Economic Development Officer	City of Prince George	■
42	Leigha	Horsfield	Business Services Manager	Community Futures North Okanagan	■
43	Matt	Hutcheon	Executive Director	Innovation Central	■
44	Rose	Klukas	Economic Development Officer	Campbell River Economic Development Corporation	■
45	Kevin	Koopmans	Economic Development	Community Futures	■
46	Bonnie	Lai	Manager, Reasearch and Analytics	BC Innovation Council	■
47	Jason	Leber	Manager, Youth Initiatives	Industry Training Administration (ITA)	■
48	Blair	Littler	Vice President	Research Universities' Council of BC (RUCBC)	■
49	Camila	Louzada	Manager, Talent Programs	BC Tech	■
50	Jason	Lum	Councillor	City of Chilliwack	■
51	Gwyn	MacGregor	Program Manager	Industry Trainign Authority	■
52	Lori	MacKenzie	Director, Policy & Research	BC Association of Institutions & Universities	■
53	Allan	Main	Executive Director	Community Futures North Fraser	■
54	Krista	Mallory	Business Development Officer	Central Okanagan Economic Development Commission	■
55	Mike	Manion	Executive In Redidence	Sumas Regional Consortium of High Tech	■
56	Kyle	Marsh	Chief Executive Officer	BC Career Colleges Association	■
57	Brad	McCabe	Executive Director	Youth Science Canada	■
58	John	McPherson	Sector Development Manager, Clean Tech	Vancouver Economic Commission	■
59	Norm	Metcalf	General Manager	Community Futures North Okanagan	■
60	Gerald	Minchuk	Director of Development Services & Economic Development	City Of Langley	■
61	Marta	Mintenko Knapik	Talent Manager: Development, Academia & Diversity	BC Tech	■
62	Alexandria	Mitchell	Economic Development Officer	City of Abbotsford	■
63	Nancy	Mott	Manager, Digital Entertainment and Interactive	Vancouver Economic Commission	■
64	Denise	Mullen	Director, Environment & Sustainability	Business Council of BC	■
65	Susan	Ogilvie	Manager, Communications & External Affairs	Life Sciences BC	■
66	Fariba	Pacheleh	President	Society for Canadian Women in Science and Technology	■
67	Kristin	Parsons	Executive Director	Mission Regional Chamber of Commerce	■
68	Chelsea	Pedersen	Program Assistant	Innovation Island	■
69	Kevin	Poole	Manager of Economic Development & Tourism	City of Vernon	■

Municipal, Economic Development, and Technology Association / Society Engagements *Continued*				
#	**First Name**	**Last Name**	**Title**	**Organization**
71	Dean	Prelazzi	Managing Director	BC Innovation Council	■
72	Sabinah	Rafiq	Manager, Youth Initiatives	Industry Training Administration	■
73	James	Raymond	Manager, Research & Analysis	Vancouver Economic Commission	■
74	Brea	Retzlaff	Community Development	Accelerate Okanagan	■
75	Annika	Rienhardt	Social Impact - Community Engagement	Social Bites	■
76	Pia	Ritch	Director of Programming	Mission Community Skills Centre Society	■
77	Line	Roberts	Chief Executive Officer	Island Coastal Economic Trust	■
78	Dennis	Rook	General Manager	Community Futures	■
79	Tom	Rothoehler	Senior Technical Support Specialist	City of Nanaimo	■
80	Daniel	Sailland	Chief Administrative Officer	Town of Qualicum Beach	■
81	Tracy	Samra	Chief Administrative Officer	City of Nanaimo	■
82	Sandra	Saric	Vice President	Information and Communications Technology Council	■
83	Clare	Seeley	Economic Development Department	District of Mission	■
84	Raseel	Sehmi	Strategy & Policy	BC Tech	■
85	Brian	Shepard	Executive in Residence	Accelerate Okanagan	■
86	Liz	Shorten	Managing Vice-President, Operations & Member Services	Canadian Media Producers Association	■
87	Ryan	St. Germaine	Chief Executive Officer	BC Jobs	■
88	Kimberly	Steadman	Operations Manager	Kamloops Innovation	■
89	Allan	Stroet	Chief Executive Officer	Bulkley Valley Economic Development Association	■
90	Elizabeth	Sun	Membership & Sponsorship Manager	Life Sciences BC	■
91	Ray	Szabada	Chairman of Board/Founder	Sumas Regional Consortium of High Tech.	■
92	Netty	Tam	Manager Business Development	Chilliwack Economic Partners Corporation	■
93	Bill	Tam	President & Chief Executive Officer	BC Tech	■
94	Valentina	Trevino	Business Development Officer	Central Okanagan Economic Development Commission	■
95	Graham	Truax	Executive in Residence	Innovation Island Technology Association	■
96	Eric	Unmacht	Communication Strategist	Vancouver Economic Commission	■
97	Drew	Vincent	Team Leader	OYP Collective	■
98	Ray	Walia	Chief Executive Officer	Launch Academy	■
99	John	Watson	Executive Director at Comox Valley Economic Development	Comox Valley Economic Development Society	■
100	Larry	Widmer	General Manager	Community Futures Central Okanagan	■
101	Christin	Wiedemann	President	Society for Canadian Women in Science and Technology	■
102	Denise	Williams	Executive Director	First Nations Tech Council	■
103	Ruth	Wittenberg	President	Research Universities Council of BC	■
104	Robert	Wong	Vice President	Creative BC	■
105	Stephen	Wu	Department of Economic Development	City of Surrey	■
106	Sandra	Zovko	Senior Analyst	BC Innovation Council	■

Government and Education Engagements					
#	First Name	Last Name	Title	Organization	
1	Daniela	Abasi	Outreach Program Manager	Simon Fraser University	■
2	Susan	Allen	Manager, Professional Development and Training	Vancouver Island University	■
3	Sohee	Ann	Executive Director, Technology Strategy	Ministry of Technology, Innovation & Citizens' Services	■
4	Kate	Armstrong	Director	Emily Carr University of Art and Design	■
5	Phil	Ashman	Associate Dean of Science, Technology and Health	Okanagan College	■
6	Erin	Athlene	Victoria Chapter Lead	Ladies Learning Code	■
7	Mark	Barnes	Assistant Director Research	University of Northern British Columbia	■
8	Derek	Beeston	Vice Principal	Nanaimo School District	■
9	Derek	Beeston	Vice Principal K-12	Nanaimo School District	■
10	Nancy	Bepple	Co-op coordinator	Thompson Rivers University	■
11	Monica	Berra	Technology Learning Lead	Prince George School District	■
12	Lindsay	Bisschop	Regional Manager	Ministry of Jobs, Tourism and Skills Training	■
13	Darren	Blakeborough	Professor in media communications	University of the Fraser Valley	■
14	Matthew	Bongiorno	Senior Advisor	Mitacs	■
15	Bradley	Bowness	Chief Information Officer	College of New Caledonia	■
16	Andrew	Brooke	Director of Operation	Premier's Technology Council	■
17	Susan	Brown	Executive Director, Strategic Policy & Planning	Ministry of Advanced Education	■
18	Laurie	Brucker	Senior Policy Advisor, International Education	Ministry of Advanced Education	■
19	Myles	Bruns	Regional Manager	Ministry of Jobs, Tourism and Skills Training	■
20	Susan	Burns	Director	Ministry of Advanced Education	■
21	Talya	Christbason	Director	Ministry of Education	■
22	Jeremy	Coad	Director of Knowledge Transfer & commercialization	Ministry of Technology, Innovation & Citizens' Services	■
23	Yvonne	Coday	Computer Science - Faculty of Engineering	University of Victoria	■
24	David	Collier	Director, ICT & Digital Entertainment	Ministry of International Trade	■
25	Patience	Cox	Career and Skills Education Coordinator	Ministry of Education	■
26	Susan	Crichton	Director of Innovative Learning Centre	University of British Columbia - Okanagan	■
27	Constance	Cromption	Assistant Professor, Digital Humanities	University of British Columbia	■
28	Christina	Doll	Workforce Development Officer	City of Prince George	■
29	Mark	Dutchuk	Instructor	Vancouver Island University	■
30	Rebeca	Espirito Santo	Human Resources & Communications Coordinator	LlamaZoo	■
31	Dr. Mark	Evered	President	University of the Fraser Valley	■
32	Patrick	Farrar	Chief Operating Officer	Venture for Canada	■
33	Tom	Fedechko	Manager	Vancouver Film School	■
34	Ian	Fenwick	Professor in Fine Arts	University of the Fraser Valley	■
35	Jason	Field	Founder	Brain Station	■

Government and Education Engagements *Continued*

#	First Name	Last Name	Title	Organization	
36	Charlyne	Fothergill	Director of Career Services	Lighthouse Labs	■
37	Derek	Gratz	Associate Director, University Industry Liaison Office (UILO), STAR Business Development, and entrepreneurship	University of British Columbia - Okanagan	■
38	Kendra	Greek	Program Manager	Ministry of Jobs, Tourism and Skills Training	■
39	Hardy	Griesbauer	Director of Applied Research	College of New Caledonia	■
40	Jon	Hamlin	Teacher	School District 43	■
41	Kim	Hart	Director of Student Information & Educational Technology	School District 68	■
42	Mark	Hawkes	E-Learning Coordinator	Ministry of Education	■
43	Randall	Heidt	Vice President, Strategic Initiatives	North Island College	■
44	Carling	Helander	Director of Immigration Policy for BC	Ministry of Jobs, Tourism and Skills Training	■
45	Jake	Hirsch-Allen	Senior Relationship Manager	Lynda Academic	■
46	Sadie	Hunter	Director of Development	Thompson Rivers University	■
47	Keith	Ippel	Chief Executive Officer	Spring University	■
48	Karin	Jager	Department Head: Graphic & Digital Design	University of the Fraser Valley	■
49	Bill	Jeffrey	Policy Analyst, Temporary Foreign Workers Program	Employment and Social Development Canada	■
50	Matthew	Kennedy	Director	Loom Inc.	■
51	Trevor	Knowlton	Digital Technology Learning Lead	Kelowna School District	■
52	Kathy	Lachman	Regional Manager, North Vancouver Island	Ministry of Jobs, Tourism and Skills Training	■
53	Cecile	Lacombe	Director, Research & Knowledge Development	Ministry of Technology, Innovation & Citizens' Services	■
54	Karen	Lamare	Director, Creative Sector Policy	Ministry of Jobs, Tourism and Skills Training	■
55	Dr. Richard	Lane	MeTA Digital Humanitiese & Innovations Labs	Vancouver Island University	■
56	Janice	Larson	Executive Director	University of British Columbia	■
57	Emily	Lewis	Workforce Mobility	Ministry of Jobs, Tourism and Skills Training	■
58	Tony	Loughran	Executive Director of the Research Universities and Health Programs Branch	Ministry of Advanced Education	■
59	Aireen	Luney	Manager, Program Development & Promotion	Ministry of Jobs, Tourism and Skills Training	■
60	Jesse	Magee-Chalmers	Associate Dean	Vancouver Island University	■
61	Rene	Maillet	Manager	Employment and Social Development Canada	■
62	Colin	Mansell	Managing Partner	Red Academy	■
63	Mark	Marino	Digital Technology Learning Lead	Kelowna School District	■
64	Val	Martineau	Teacher Librarian	School District 68	■
65	Terry	Matthews	Account Manager, Employer Relations	University of Waterloo	■
66	Michelle	McCready	Program Administrator, Science, Technology and Health	Okanagan College	■
67	Cheryl	McLay	Regional Manager	Ministry of Jobs, Tourism and Skills Training	■
68	Chris	Midgley	Manager of Energy & Sustainability	Regional District of Nanaimo: Development Services	■
69	Rob	Mingay	Assistant Deputy Minister	Ministry of Jobs, Tourism and Skills Training	■

Government and Education Engagements *Continued*

#	First Name	Last Name	Title	Organization	
70	Cloe	Nicholls	Executive Director of Immigration	Ministry of Jobs, Tourism and Skills Training	▪
71	Robb	Oshima	K-12 Account Executive	Lynda Academic	▪
72	Wade	Peary	Principal	Riverside College	▪
73	Trevor	Quan	Lead Analyst	Premier's Technology Council	▪
74	Feng	Ren	Senior Economist	Ministry of Jobs, Tourism and Skills Training	▪
75	Shannon	Renault	Director, Sector & Project Based Programs	Ministry of Jobs, Tourism and Skills Training	▪
76	Sean	Ridgway	Animation Department Head	Centre for Arts & Technology	▪
77	Jeff	Scott	Director, Citizen Services and Program Delivery Branch	Employment and Social Development Canada	▪
78	Jeremy	Shaki	Co-Founder	Lighthouse Labs	▪
79	David	Shortreed	Technology Learning Lead	Victoria School District	▪
80	Mike	Silverton	Educational Technology Specialist	Computer Usng Educators of British Columbia (CUEBC)	▪
81	John	Simonson	Director of Instruction	School District 23	▪
82	Lincoln	Smith	Director, Research Partnerships and Enterprise Creation	Thompson Rivers University	▪
83	Glynis	Steen	Dean, Trades & Applied Technology	Vancouver Island University	▪
84	Jacqui	Stewart	Executive Director, Post-Secondary Audit and Accountability	Ministry of Advanced Education	▪
85	Scott	Stirrett	Founder & Executive Director	Ventures for Canada	▪
86	Cathy	Sturgeon	Master of Arts, Leadership at Royal Roads University	Royal Roads University	▪
87	Naomi	Tabata	Manager, Centre for Applied Research	North Island College	▪
88	Tanya	Tarlet	Co-Ordinator: Student, Graduate and Co-op Employment	Okanagan College	▪
89	Jennifer	Tedman-Jones	Director of Business Development	Ministry of Technology, Innovation & Citizens' Services	▪
90	Craig	Toews	Executive Director	University of the Fraser Valley	▪
91	Kyle	Treleaven	General Manager	Brain Station	▪
92	Louise	Turner	President	Premier's Technology Council	▪
93	Kirsten	Twidale	Policy Analyst	Government of Canada	▪
94	Randal	Typusiak	Industry Relations Placement	Centre for Arts and Technology - Kelowna	▪
95	Jan	Unwin	Superintendent of Graduation and Student Transitions	Ministry of Advanced Education	▪
96	Sian	Upton	Employer Liaison Officer	Immigration, Refugees and Citizenship Canada	▪
97	Khurram	Virani	Co-Founder/Partner	Lighthouse Labs	▪
98	Bonnie	Wai	Senior Policy Analyst, Strategic Policy and Planning	Ministry of Advanced Education	▪
99	Eben	Watt	Director, Workforce Mobility	Ministry of Jobs, Tourism and Skills Training	▪
100	Cameron	Whitehead	Senior Policy Analyst	Ministry of Jobs, Tourism and Skills Training	▪
101	Angus	Wilson	Superintendant of Schools	Mission Public Schools	▪
102	Tim	Winkelmans	E-Learning Program Leader	Ministry of Advanced Education	▪

APPENDIX III

Standing Committee on Human Resources, Skills, and Social Development and the Status of Persons with Disabilities

Parliamentary Review Witnesses for the Temporary Foreign Workers Program:

Kathy Gibson, Sr. Consultant for Talent, Vancouver Economic Commission
Sean Elbe, Sector Manager for Technology, Vancouver Economic Commission

The Landscape

Good evening, my name is Sean Elbe and I am the sector development manager for the technology sectors for the Vancouver Economic Commission (VEC). We are very pleased to have been invited here, and to be included in these important sessions today – thank you.

As the economic development agency for the City of Vancouver, the Vancouver Economic Commission's mandate is to position Vancouver as a global destination for innovative, creative and sustainable business.

Our focus is on the wealth generating, high growth low-carbon, knowledge based economy. Many do not know that Vancouver has the highest rate of economic growth of any major city in Canada and according to the Conference Board of Canada, we will continue to lead the country in GDP growth until 2019.[1] Vancouver also has achieved the lowest unemployment rate in Canada[2]. This points to labour shortages in the greater economy and acute shortages in key sectors that are leading our economic success which we know are technology, the digital entertainment and interactive sectors and companies that operate in the 'Green Economy'.

As I'm certain you've heard from your business constituents, companies require two critical resources to facilitate the growth; access to capital and access to talent. What we are here today to discuss of course are the challenges that we hear day-in and day-out from our companies about finding the right talent and filling the over 2000 immediate vacancies[3] and over 15,500 vacancies over the next five years as the sector grows in our region alone[4].

So why are we seeing this growth? We are blessed as an attractive place for foreign direct investment because of our top global ranking as a livable city; a place where talent wants to be. In addition to low corporate tax rates, significant investments in innovation and proximity to the San Diego, San Francisco, Seattle corridor, we sit on top of the wealthiest, most innovative and greenest regions in the world. But the truth is, in this corridor, top talent is drawn to Vancouver like a magnet. Major global technology, digital entertainment and clean tech companies are investing heavily in new facilities in Vancouver and hiring hundreds locally.

Vancouver's startup ecosystem is an engine of growth and as exciting an element to our economic story as global companies coming to our region. Vancouver is ranked as a top global startup hub. This is evidenced by recently being recognized as being Canada's top city for head office growth[5]. And these growing head offices need the executive leadership, senior talent and global expertise that in many cases are not always found within our borders. These industries though, don't think within borders and they are transforming our local economies and shaping our cities. Two thirds of the new 5.5 million square feet of new office space in downtown Vancouver is being taken up by technology and digital companies[6]. Their goal is to fill them with knowledge workers.

It is through these lenses that we recognize the serious and immediate labour shortages that are facing our priority sectors. The

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1   http://www.conferenceboard.ca/press/newsrelease/16-03- 03/vancouver_to_lead_country_in_economic_growth_again_in_2016.aspx
2   https://www.biv.com/article/2016/5/bc-leads-country-job-growth-and-has-lowest-unemplo/
3   Project underway in collaboration with BCIC, BCTIA, BCJobs
4   http://www.ictc-ctic.ca/labour-market-outlook-2015-2019-press-release/
5   https://www.biv.com/article/2014/10/vancouver-leads-nation-head-office-growth/
6   CBRE

discussions you are hosting on the Temporary Foreign Worker Program (TFWP) are vital to the needs of our industry and we are thrilled to be your partners in Vancouver to share our economic story, the challenges and opportunities facing our companies and recommendations on how you can help fuel our continued growth, which we hope can be recognized as a success that everyone in Canada can be proud of.

Fast Facts
- Vancouver has the lowest unemployment rate in Canada
- The Technology sector is growing twice as quickly as any other sector in BC
- According to the Conference Board of Canada, B.C. is the only Province slated for growth
- According to the 2015 BC Stats Report, technology jobs account for more than our traditional resource industries (forestry, mining and oil & gas) combined
- Technology jobs pay 67% higher wages than average industry
- According to the 2012 & 2014 KPMG Reports, talent continues to be an issue within the Province of BC for Technology companies

Thank you Mr. Chair and esteemed committee members for the opportunity to speak. My name is Kathy Gibson, Sr. Consultant with the Vancouver Economic Commission, and appreciate the invitation to bring forward the economically focused, labour market specific concerns we are privy to through our extensive engagement with Vancouver-based and Provincially-based employers. Although we recognize that there are many difficulties with the TFWP across various sectors, the focus of our interests today is around knowledge-based, highly skilled, highly mobile workers.

The BC tech industry is among the fastest growing sectors in the province and as reported in the latest 2015 BC Stats Report, accounts for more jobs than our traditional resource industries (forestry, mining and oil & gas) combined (citation). There continues to be a pronounced shift in the economy towards knowledge-based jobs and we anticipate that the BC tech sector will play a major role in both job growth and the creation of higher paying jobs.

The Opportunity & Conversation
Employers have a legitimate need and use for the TFWP, and changes to the program can help support Technology & Digital Entertainment employers in bringing growth and jobs to Canada. The current program has been designed to protect the Canadian labour market and is built on the assumption that Canadian businesses should be satisfied with workers with average skills and experience, as a consequence Canadian businesses are not able to access the exceptionally talented skilled workers their businesses require. It's a different dialogue and narrative than discussions of average workers. A significant & exciting opportunity exists to ensure that we are building policies that are congruent with the needs of the technology and digital entertainment & interactive. We must ensure we are building programs that capitalize on excellence and not adequacy. Employers need to be enabled to to hire the best talent; people who can drive innovation and have highly sought after, specialized skills.

What We Hear From Employers
We hear from employers that it is in their interests to maximize domestic (Canadian) workers first as it is costly to run international searches, attract and interview talent and then look to relocate them. Once found, there is a time sensitivity in bringing key personnel to Canada, based on tight business cycles and project deadlines.

What We Understand
Of course, Immigration, Refugee, Citizenship Canada (IRCC) & Employment, Workforce Development and Labour including Service Canada intend to protect "vulnerable TFWs" but technology workers are not particularly vulnerable and in need of protection. In the Technology or Digital Entertainment sectors, workers are **well educated, speak English, are well-paid, are headhunted and are in high demand** internationally. Including Technology workers in this "vulnerable" category is problematic, inefficient & an unnecessary drain on government resources.

The Program Opportunity

The TFWP has an opportunity to design a program that could make Canada more attractive than the USA – through immigration programs. It should be noted that the brain drain of Canadian talent to the United States will always be an issue. Given the global mobility of technology talent coupled with the sheer ten- fold size of the United States' economy and population compared to Canada's, the loss of some talent must be expected. In light of this fact, Canada must reform and improve policy in order to be competitive and retain talent.

Unintended Consequences

There have been significant, unintended consequences and negative economic impact since the overhaul of the Temporary Foreign Workers Program in June of 2014. The VEC has tracked hundreds of millions of lost business, specific losses related to:
- Revenue
- Lost Projects
- Canadian workers who would have otherwise been hired and trained by key international talent
- Significant taxes that would otherwise be paid by highly skilled, highly paid workers – international & domestic
- Reputation cost for Canada as a country to do business in since the overhaul of the TFWP
- Negative human experience – especially when compared to regions like Singapore when an employer and employee receive a text message within 4-24 hours confirming the work visa application has been approved. This is the global reality of what Vancouver is competing against.

The Reality for Employers

Time is a currency for success within Technology. The result of the uncertainty of securing a positive LMIA has significant consequences for project planning. According to the employers the VEC works with, they report significant time and effort in the application process, unreasonable challenges to their Canadian recruitment efforts and protracted negotiations concerning the Transition Plan, with the most common LMIA refusals issued based on "*insufficient proof of adequate Canadian recruitment*." An employer reported that, "*two negative reference checks were deemed an insufficient reason to not hire the Canadian*". Concerns from Foreign Worker Officers that job requirements are "*too strict or excessive*" and would thus unreasonably "*make Canadians ineligible*" is another reason for refusals. For example, if the number of years of experience is deemed by an Officer to be too high, thus making some Canadians ineligible for the position, this can be the basis of a denial. Some Officers have taken the position that requiring more than three years of experience for a non-managerial position and more than five years of experience for a managerial position are excessive. These issues are particularly problematic within Technology, where local employers are competing for talent, products and services globally and need exceptional talent to take them to the next level of performance.

Employer Quotes

One Technology Employer stated at a recent Roundtable that the Vancouver Economic Commission hosted for Minister McCallum "***that a quarter is a lifetime in my business, we grew by 40% last quarter. If I need to wait a quarter to hire someone critical to my business, I simply can't compete***."

We need to trust our local industry experts on what is best for their growing businesses. Companies are refusing to make LMIA applications, opting instead to keep the position vacant or move business operations elsewhere:
- *Specifically we have had multiple reports from Multinationals organizations who are simply:* **deciding to locate projects in other countries which otherwise could be done in Canada** *(DE&I)*
- **Redeploying talent resources to other jurisdictions outside of Canada**. *(Life Sciences)*
- *A major multinational employer stated that they had downgraded Canada to no longer being a good place to do business; the rating went from Recommended to Not Recommended after the overhaul to the TFWP. (ICT)*

In April 2015, the VEC partnered with the HR Tech Group and surveyed technology employers across B.C. In attempting to quantify the impact of the TFWP overhaul on their businesses, companies struggled to quantify the impact with varying answers up to $10M. We asked, "What do you estimate will be the cost (in dollars) to your business of not being able to bring these workers to your business due to immigration delays?"

Here is a sample of answers quoted:
- *Simply, we cannot afford to lose the work so we get India or China to do the work - so BC and Canada are really losing out!*
- *Salaries, roles will be recruited for in the US - approximately 20 roles - a payroll of $1.4 million - approximately 25% more salary then we would pay in Canada. + 50% of healthcare and lost Canadian jobs Slow to hire for this role will impact our ability to grow and move our business forward.*
- *$200,000 +*
- *This is difficult to quantify but a rough guess would be close to $100,000 a month or more depending on the role. A Live Operations Lead would be more than that for example.*
- *$500,000-$10,000,000 If we can't crew up a project, we could lose it completely.*
- *Between $250,000-$500,000 per hire per year for the first year future revenues could be impacted by product release delays.*
- *Too difficult to calculate. The problems it causes include: Loss of productivity of employees dealing with visa or immigration issues, delay in hiring qualified workers leading to product launch delays, stress on current employees, lack of products to sell to customers, etc.*
- *Longer wait times, cost for applications, time/cost of transition plan administration, time/cost of massive data tracking. Overall, it is harder to hire a TFW, and with there being so much work in the city, there are nowhere near enough Canadian/PR candidates to crew the projects. Our teams are running short and we are not able to get TFWs on to our teams efficiently.*

Similar results came from the December 2015 Canadian Employee Relocation Council (CERC) survey of employers that access the program. Key findings from the survey include:

- 59%, say the changes made to the TFWP have had a negative impact on their business planning strategies and their ability to recruit skilled workers.
- 69% say the changes to the LMIA requirements, compared to the prior LMO, have had a negative impact on the organization's ability to recruit skilled workers.
- 16% have moved work outside of Canada as a consequence of the changes implemented.
- 75% say they do not have access to timely and accurate information about the programs managed by Employment, Workforce Development and Labour (formerly ESDC).

Here is a sample of answers quoted from the CERC survey:
- *Significant impact to the timeframe to onboard our very highly skilled foreign talent. The impact has been so significant that our Canada offices have changed their hiring strategy, and positions are instead being moved to other countries with less immigration lead times (Germany, Ireland, UK, and India).*
- *The changes have led us to discourage the inclusion of Canada as a viable location in some of our staffing plans due to the timing required and difficulty in securing work authorization.*

Why Do We Need Temporary Foreign Workers?
Reliance upon TFWPs and changes to the Labour Market are dependent on many factors:
1. Competition
   - Foreign Direct Investment (FDI) – global players who set up shop in the region
   - Successful start-ups & "Unicorns" (defined as start-ups that are valued at more than $1b)

2. The in-demand skills required:
   - The kind of technology, products or services that require specialized workers
   - In some cases, there may quite literally be only a handful of workers across the globe who have the skillset and experience to do that job (the VEC has had employer reports of LMIA refusals)
   - In some cases, there are no university programs that develop the kind of talent that employers demand (the VEC has had reports of refusals)

3. Brain Drain to other regions
- Recent reports are indicating that retention rates are decreasing, turnover is on the rise and the cost to employers is rising as a result[7].
- Overhaul of the TFWP doc details an example of flow of talent:
  - NAFTA: "While about 12,000 Americans worked in Canada through the NAFTA professional occupation provision in 2011, the number of Canadians working in the United States through the same provision more than tripled that, with about 39,000 in all."[8]
    - USA is 10 fold our economic and population footprint

4. Globally Mobile Talent: efforts to employ Canadians first must be balanced with the recognition that certain high-wage jobs, in sectors competing for top international talent, require policy variations to remain globally competitive.

Labour Market Conditions

The Province of BC has forecasted a need for 935,000 workers over the next 10 years and only two-thirds of those jobs will be able to be filled with local residents entering the workforce. So, within the next 10 years, migration and immigration will be the anticipated mechanisms to keep pace with this demand and, historically, migration has not been the answer.

There are retention issues compounding the talent shortage, due to the draw of the low dollar and concerns from employers and employees related to cost of living, particularly housing. The HR Tech Group recently found that talent retention rates over the last two quarters are falling and turnover cost to employers are increasing.[9]

Recommendations

The Vancouver Economic Commission has the following recommendations to offer the Temporary Foreign Workers Program administrators.
1. Program Rebranding
   - There is a significant opportunity for the Federal Government to rebrand the TFWP and allow Canadian businesses to compete on an international stage. There is a rebranding exercise that could be undertaken to stream skilled workers into a newly framed program. Instead of the "controversial Temporary Foreign Workers Program", a new program could be launched, perhaps the **High Skilled** or **High Economic Benefit Professional Worker Program**, for example.
   - Policy framework: To ensure that the employer is a Technology company, the employer could be required to be a High Technology Company as defined under the BC Employment Standards Act (developed in consultation with industry in 2010).

2. LMIA Variations (exemption)
   - Similar to many other jurisdictions which have identified Talent as a key economic contributor to success, an overarching LMIA exemption for technology occupations, similar to the recently introduced exemption for Television and Film Production Workers (Exemption Code C14) can be implemented. A similar argument to that provided on IRCC's website for Television and Film Production Workers[10] can be made that facilitating entry for these workers under the International Mobility Program serves to support existing public and private investment and protect Canada's economic interests in continuing to attract high-value businesses to Canada. The work that is essential to tech product and service production is considered to create and maintain significant economic benefits and opportunities for Canadians and permanent residents. Clearly defined parameters could be set to prevent excessive reliance on the exemption, such as wage minimums. We realize that an LMIA exemption falls under IRCC's jurisdiction, but presume that Employment, Workforce Development and Labour's opinion about the proposal would be valued by IRCC.

3. Sector-Wide Transition Plan
   - A sector wide Transition Plan for Technology would assist in timely processing (building on the success of the sector wide Transition Plan developed for the Digital Entertainment & Interactive sector in BC).
   - Policy Framework: To ensure that the employer is a Technology company, the employer could be required to be a High Technology Company as defined under the BC Employment Standards Act.[11]

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7   HR Tech Group's Executive Director Quarterly Report
8   http://www.esdc.gc.ca/eng/jobs/foreign_workers/reform/overhauling_TFW.pdf
9   HR Tech Group's Executive Director Quarterly Report
10   http://www.cic.gc.ca/english/resources/tools/temp/work/opinion/imp-c14.asp
11   https://www.labour.gov.bc.ca/esb/facshts/high_tech.htm

4. Separate channel for expediting highly skilled workers
- A pilot program for the Tech Sector, similar to the IT Technology Pilot Program, the Province of BC availed of years ago when specific employers could submit simplified LMO applications under specific occupations without demonstrating Canadian recruitment and were guaranteed 1-3 day processing by an appointed Officer.
- Programs such as the Trusted Employer (in place in UK, Ireland, Sweden, Australia and being piloted in the U.S.) so concerns about the specific employer's employment and recruitment practices would be lessened.

5. Recruitment *Variation* exemption
- Similar to the recruitment exemption that VFX and Animation studios have, and in light of the labour market conditions, a variation from the need to prove recruitment efforts would reduce uncertainty and delays for employers. The majority of Technology employers utilize innovative mechanisms to reach the highly skilled talent they need, some of which do not necessarily align with the recruitment requirements under the TFWP. A variation to this requirement would increase employers' willingness to invest the time and effort in pursuing an LMIA rather than keeping a position vacant and improve timely processing. The Digital Media Occupations variation is a model of success which has led to Vancouver being one of the world's largest visual effects hubs. Clearly defined parameters could be set to prevent excessive reliance on the variation, such as wage minimums.

6. Industry-Government Collaboration
- The Technology Sector welcomes the opportunity to connect with both Policy & Operation divisions and assist front-line Officers in understanding the nuances of the Technology sector.
- Similarly, there is an interest in providing a reasonable framework for compliance audits:
  - Reports of 40+ hours of employer work required for unreasonable requests of all time sheets across an entire site.
  - Report of Integrity Service Investigators making determinations of noncompliance when in fact employers are compliant with the BC ESA – e.g., High Tech Professional Workers are Overtime Exempt.

7. Improve processing times
- This can be achieved by having Foreign Worker Officers specialize in the tech sector, similar to Officers who specialize in the Digital Media Occupations applications.

8. 8) Increase training of staff
- In pursuit of consistent processing, the TFWP can provide access to manuals and provide transparency in the assessment process.

9. 9) Employer Compliance Issues
- Creation of transparent criteria for reasonable audits, in collaboration with industry
  - Employers report unreasonable hours to meet requests for documentation from Integrity Services Investigators. One employer said "it took us over 40 hours to gather the requested materials." The following case demonstrates that there is a significant disconnect between what Investigators are targeting as employer "non-compliance" and provincial employment standards definitions and procedures.
  - **Case Example:** (June 1, 2016) A BC Visual Effects employer has been undergoing a TFWP inspection whereby the Integrity Services Investigator is of the view that the employer may have been non-compliant with the BC Employment Standard Act for not paying overtime to its digital artists. The employer submitted an LMIA application noting that overtime was not applicable to the occupation and a positive LMIA was granted by Service Canada. However, on inspection, despite the fact that the employer has complied with the terms of the positive LMIA, the Investigator is questioning whether the digital artist is exempt from overtime under the BC ESA. The Visual Effects employer takes the position that digital artists fall under the definition of "High Technology Professional" and are therefore exempt from the requirement of being paid overtime. This is a specific exemption that is unique to British Columbia as set out in section 37.8 of the Regulations to the BC ESA. In order to prove compliance with the BC ESA, the Investigator is requiring the employer to obtain some sort of written confirmation from the BC Employment Standards Branch that digital artist positions fall under the "High Technology Professionals" exemption. This type of request is difficult and unusual as the BC Employment Standards Branch does not provide advance confirmations or rulings on these types of questions unless there is a complaint filed to the Branch by an employee. In other words, securing such confirmation is not possible and therefore unreasonable.

Other Immigration Issues Hurting the Economy

1. Bridging Open Work Permits:
- a) Allowing CBSA to grant bridging open work permits would alleviate this issue, especially in those cases where the worker needs to leave Canada, thereby cancelling their implied working status. We realize this is an IRCC issue, but we wish to inform you of such issues. i) Employer Quote: "We would love to see a more "just in time" process to help expedite technology skilled workers to get their working papers more quickly. The stress this is causing for employees "in transition" as well as missing out on those people who have applied, waiting to apply, waiting on a decision is definitely putting us behind our competitors."

2. Multiple Locations
- Allow executives, professionals etc. to work at multiple locations – eliminate the need to apply for a new LMIA when a new work location is required, including eliminating the need to conduct new Canadian recruitment.

3. Labour Market Intelligence
- More tools and data are required to assist front line Foreign Worker Officers in navigating the Labour Market intelligence. Service Canada should better leverage provincial data in order to reflect B.C.'s labour market realities. The VEC can facilitate the identification of such data sources.

4. National Occupation Codes (NOCs)
- Consider a system that is not attached to pre-iPhone, outdated NOCs.
- The NOC system is particularly problematic for the Technology sector in the face of the fast evolution of Technology. Often employers are forced to categorize their workers into a code system that does not accurately portray the work that the employee is doing, due to the lack of suitable alternative. "Fur cutter" for example is the most appropriate NOC for apparel designers and some employees working within Life Sciences. On occasion occupations that are not typically classified as Technology but critical to the business may also be required; for example Lifesciences BC reported that one local company required tailors, recruited from Europe, to do fine hand stitching for a medical device. A competency- based approach or hierarchies/families of NOCs may be more appropriate for the Technology sector, with consideration for the differences between specialists and generalists, both valuable required skillsets depending on the nature of the business.
- NOCs developed by ESDC are only for jobs standardized across the country. There are many pitfalls when emerging technologies are concerned.
- B.C. employers have voiced concerns on categorization of specific NOCs where government can interpret a candidate's NOC differently than an employer. Recently, an employer shared that they lost a foreign candidate due to the difference of interpretation of the NOC by Service Canada during the LMIA process, despite lengthy conversations, documentation and explanations.

5. Cumulative Duration
- The four-year cap for NOC B workers particularly impacts Digital Artists (NOC 5241 "Graphic Designers and Illustrators", who are specialized and typically working within the DE&I: Digital Entertainment & Interactive, technology subsector). We recommend exempting Digital Artists (but not Graphic Designers and Illustrators generally) from the cumulative duration or moving them under NOC as a separate occupation. Not all temporary foreigner workers want to become permanent residents so they are being capped out and required to leave Canada. There are some segments of TFW populations who prefer to work nomadically, bringing a wealth of international expertise to each new job they take on. It requires a significant amount of HR resources in order to track whether a new hire will be capped out

6. Post-Graduate Work Permits
- Each year, B.C education institutions train high volumes of international students who could be employed by the industry. However, immigration policy related to post graduates is also currently problematic for employers. Industry would welcome the re-introduction of the pilot program that allowed international students to receive post-graduate work permits in B.C. following graduation, as well as re-introduction of the International Graduate/ Student variation which exempted demonstration of Canadian recruitment and allowed the employer to pay below the prevailing median wage when seeking an LMIA. Improving the original pilot program to include unable to match the prevailing median wage for their occupations for such entry level positions. Graduates would require at least 2+ years of post-graduate experience to reach minimum required salaries for LMIAs.

7. Junior / Two-Tier Salary Requirements for TFWs:
- There are several short duration, technology boot camps and digital entertainment private educational programs that are meeting real-time employer demands. There are not enough Canadians entering into these programs. As mentioned in the section immediately above, international graduates are not eligible for an LMIA typically at the median wage as they have not yet developed enough experience. In Quebec there is a two-tier wage system to address this issue. We encourage such a system to be implemented federally.

8. Express Entry:
- Employers report that the one-touch approach (which leads to many application rejections) is causing significant issues and loss of talent. Simple requests for a document and utilization of technology, such as a quick email, would alleviate much pain from the process. We understand that IRCC is making progress on this matter, but there still seems to be room for improvement.
- Fixed term job offers should be considered in light of labour market conditions and the nature of Technology projects. VFX / Animation employees and others within Technology struggle to secure enough points to apply for Express Entry due to their not having indeterminate job offers, and therefore not eligible for the 600 points for having a Qualifying Offer of Arranged Employment (i.e., an LMIA and an indeterminate job offer).
- Consultation with industry on solutions for express entry is recommended. Employers are frustrated in hiring senior managers and even executives who have many years of experience but are being penalized by not earning any points for Age. Persons aged 45 or older do not receive any points for Age and persons aged 30 start to lose points for Age.

Anticipated Results
- Developing a critical mass of talent creates an ecosystem that will grow. Availability of talent has been widely established to fuel economic growth within Technology and Innovation and countries acknowledging this are changing their policies to reflect the realities around developing technology- based services and products. The Provincial labour forecasts are alarming and it has been established that BC does not have enough qualified British Columbians or Canadians to meet the labour need.

Vancouver Economic Commission
- The VEC works to position Vancouver as a globally recognised city for innovative, creative and sustainable business. We do this by strengthening Vancouver's Tech, Digital Entertainment and Green Economy sectors through strategic programmes and initiatives that address each stage of the business growth continuum. The VEC's work includes advising business leaders, connecting businesses to talent, capital and markets, and promoting Vancouver as a premier destination for smart talent, capital and business. Currently, the VEC is conducting a comprehensive multi-stakeholder, talent strategy for the technology sectors in Vancouver and British Columbia.

APPENDIX IV

Detailed List of Stakeholder Feedback

Overarching Stakeholder Feedback: Opportunity to serve interest of all sub-sectors, regions and subcommittees		
Industry	**Industry & Government**	**Government**

	• **Create a permanent WFD Working Group** that serves the talent needs of industry (Build a coalition of the many tech groups towards solutions: i.e./ Tech Associations, Economic Commissions, Cities, Sr. Stakeholders / Employers, Education, etc....)
	
	• **Develop and execute a 10 year+ targeted marketing campaign** for the purposes of:
	  - Promotion / Public Relations
	  - Outreach / Engagement
	  - Attraction / Recruitment
	  - Retention
	
	  - **Goals:** ie/ awareness of career opportunities in tech to maximize domestic work pool & attract internationally sought-after talent; general public relations campaign (importance of tech & innovation, industry capabilities, and opportunities)
	
	  - **Local Targets**
	    - Youth
	    - Under-represented groups
	    - Mid-Career Changers (demystify, showcase lifestyle and type of work)
	    - Parents
	    - Teachers
	    - General Public
	    - Current tech workers (retain)
	
	  - **International Talent Targets** (including but not limited to expatriate Canadians) & companies to expand business operations into BC (lifestyle, community / hubs, flourishing scene, innovation, leadership/ mentorship)	

Outreach & Diversity		
Ensuring under-represented groups are engaged and represented in BC's tech ecosystem; maximizing domestic workforce		67
Industry	**Industry & Government**	**Government**

• Industry driven events, in partnership with Ministry of Education and school districts, the teachers' federations and others to influence the influencers (parents, teachers, guidance counselors) & youth campaigns, activities include:
  - Employer &/or industry tours of tech companies;
  - Industry-Parent informational nights
  - Encourage/support employers to provide and promote flexible work options to better engage under-represented groups
	• **Outreach: Targeted towards under-represented groups:**
	  - Awareness of opportunity, economic benefit of, success stories targeting under-represented groups, such as:
	    1. Women
	    2. First Nations & Indigenous
	    3. New immigrants to Canada
	    4. Refugees
	    5. Older population
	
	• Activity: Job Readiness programs inclusive of mentorship and coaching; match-making events
	
	• Strategies and bridges to be developed to better link First Nations and Indigenous and other under-represented groups to opportunities being created in existing and emerging economic clusters
	
	• Training in areas such as unconscious bias and hiring practices that promote diversity
	
	• Establish an advocacy and/or training organization for underrepresented groups
		• Support for employers who run programs that encourage women to reintegrate into the workforce after having and caring for children
		
		• Support for employers who run programs that encourage under-represented groups

Education & Job Readiness
Educating various ages and groups, in a variety of formats and on a range of subjects needed by the technology industry

Industry	Industry & Government	Government

• Industry involvement in Pro-D days, career fairs and job clubs to inform teachers about the possibilities within Tech;
 	
• Support K-12 educators through volunteering time in partnership towards training children/youth
	• **Targeted Marketing / Outreach**
	- Students and youth at different ages;
	- Parents, teachers and general public;
	- Attracting youth: highlight benefits of tech careers: lifestyle, earning potential, a vibrant community.
	
	• **Hands-on Learning**
	- Recognize the importance of hands-on-learning for students, inclusive of Cooperative Education, Internships, Practicums and hands-on learning opportunities, curriculum & programs;
	- Double science fair engagement through government funding and industry partnership.
	- Consider editing existing programs to engage Tech students in the labour market (ie/ earning Academic Credits from work training while doing a master's degree)
	- Strengthen overall, province wide work placements / coop-type programs to drive increased placements; consider new incentives for employers to hire and train students &/or new graduates, in recognition of the significant investment training requires from employers;
	
	• **Centralized Organization / Industry-Academia Facilitator**
	- Centralized Organization / Industry-Academia Facilitator (perhaps by region or sub-sector): duties could include tech-placement, match-making, marketing and training services for university students;
	- Pilot Events towards increasing industry activities in schools, reducing organizational and systemic barriers, including laddering pathways to bridge the transition gap between high-school and post-secondary to prepare students for careers in Tech;
	- Improve opportunity for educational institutions and industry to work more closely together to ensure that graduating students are able to meet the needs of the job market (i.e./ Industry Advisory Councils for programs);
	
	• **Increase seats and Capacity**
	- Feasibility study of establishing a "Tech / Development Centre" to increase capacity to funnel talent into the growing tech sector; any new programming to include hands-on-learning / integrative learning components and have industry advisory boards on curriculum development.
		• **Expand Seats and Capacity**
		- Expand technology-related post-secondary spaces and programs (i.e./ Increase number of seats for STEM and related-tech occupations such as business management, sales, etc.)
		- Pilot events towards increasing tech activities in schools.
		- Review post-secondary education curriculum plans to, where needed, to modernize and optimize alignment with tech workforce needs;
		
		• **Job Readiness Programs**
		- Greater investment in job readiness programs that could include programs such as:
		  - Expand/improve/enhance hands-on-learning program capacity and opportunities through co-ops, internships & practicums;
		  - Consider programs to enhance job readiness for under-represented groups;
		- Creation of an oversight organization, perhaps a Crown Corp to service Tech sector – similar to the way ITA does for the trades or adapt existing oversight organizations to serve Tech sector talent needs
		
		• **Predict Success to Reduce Dropout Rates**
		- Work with post-secondary institutions to identify predictors of success & alter admission requirements to favour students with best prospects;
		
		• **Improve Program Pathways:**
		- Improve pathways for students who are not admitted to top universities (i.e. GPAs under 90%)
		- K-12: Expansion and continuation of industry collaboration and of work the ministry of education has started.

Education & Job Readiness *Continued* Educating various ages and groups, in a variety of formats and on a range of subjects needed by the technology industry		
Industry	**Industry & Government**	**Government**

	• **Skills Training**
	  - Train on how to adapt, ramp-up, interpersonal, collaboration skills and becoming capable of rapidly learning new skills
	  - Industry shared professional development by creating webinars and training for technology practitioners across the province
	  - Promote the hiring of more arts or other soft skilled students into tech (sales, marketing, business development)
		• **Remove barriers to partnership with industry** through a variety of mechanisms:
		  - ACE-IT program and advisory board for tech
		  - Surround children by individuals who are comfortable with technology and have experience working in technology careers; consider industry board / certification process in partnership with the Teachers Federation
		  - Access to hardware and software in classrooms
		  - Assign a designated individual to liaise with regions or school districts
		  - Allow for donations of equipment & industry time;
		  - Instructor compensation grids to attract tech instructors, ranges should be competitive with general market;
		
		• **Expand Curriculum Development Opportunities:**
		  - Hands on learning opportunities at all ages (Lego, Science Fairs, Presentations from industry)

Recruitment and Retention
Attracting the right quality workers, from the right markets, and keeping them in the province

Industry	Industry & Government	Government

• Career Progressing Mentorship Program - formalized access to training for mid-senior talent
 	
• Flexible hours for tech workers to increase job satisfaction and allow for family/children time
 	
• Provide volunteering / mentoring time for tech workers so they can train students, sit on advisory boards for schools, etc....
 	
• Address consistency of Healthcare as a recruitment and retention consideration by starting a "Tech Sector Walk-in Clinic" in regions where lack of healthcare is perceived to be a barrier to recruitment and retention
	• **National and International Mobility**
	  - Tactics to improve labour mobility across Canada and Internationally– i.e./ Recruitment / Attraction events and campaigns, etc.... (identifying pockets of talent across the globe that could be targeted, "hubs of mobile talent")
	
	• **Development and Training**
	  - Initiatives established to increase industry awareness of training opportunities, partnerships & collective training where there are skill shortages, as well as expansion and editing of existing funding programs (i.e./ BC Jobs Grant);
	  - Develop and leverage regional initiatives to determine industry training and staffing needs;
	  - Employer support for professional development: organize training activities, paying for courses (i.e./ BC Jobs Grant);
	
	• **Retention / HR Resources**
	  - Marketing campaigns to stay and grow your career in tech; destination to develop your career (see marketing section)
	  - Mentorship program for Tech HR practitioners to increase HR professional skills;
	  - Expansion of HR Tech Group to other regions;
	  - Tech industry shared professional development by creating webinars and training for HR Practitioners province wide
	
	• **Mobility / Family Logistics**
	  - Family support, community engagement in soft landing
	  - Online portal to establish or expand brokerage services to link employers and prospective employees, services such as daycare, schools and other critical information;
	  - Government support through reduction of red tape, fast tracking daycare licencing, building approvals & subsidies for quality childcare for technology workers;
	
	• Centralized place to assist / concierge services up to and including a web-solution guide to navigate that would need to be regularly maintained and updated.
	
	• Spouses finding work network, including parents and children;
	
	• Supports for meet-ups, conferences, celebratory events, networking, etc.;
	
	• Development of key communication pieces and further intel on regional affordability, winners / tech community in BC for attraction purposes
	
	• **International Attraction (see marketing)**
		• Test-pilot financial incentives for local talent to stay in BC (e.g. student debt forgiveness or tax exemption to retain tech talent for a period of 4-5 years+ to anchor talent to BC);
		
		• Make it easier for tech companies to find new talent through a skills/job match program;
		
		• Reform and expand existing programs to reduce red tape and increase training supports;
		
		• Enhance and expand tax credits like IDMTC and DAVE to include contract related staff and other sub-sectors of technology where there is significant economic opportunity
		
		• Enhance and expand working programs such as: Advantage BC and related subsidies, BC Job Grant, First Job in Science, Coop Grants, etc...
		
		• Improve transit networks and improve access to transit;
		
		• Access to quality daycare options (currently 3200 families on wait list at VSOCC);
		
		• Improve roads (ie/ Abbotsford to downtown)
		
		• Reduce ferry costs, improve Wi-Fi quality / coverage on ferry

Immigration *Continued*		
Removing barriers to obtain highly-skilled, specialized and in-demand international talent		
Industry	**Industry & Government**	**Government**
	• **Escalation Services Where Strong Business Case** 　- Create a Government Relations Immigration Specialist. – ongoing collection of data, intel, issues, escalation of cases where there is appropriate business need 　- Employer hotline: request the establishment of an employer hotline where officers familiar with our sector are able to answer questions on the status of applications (EE, TWFP, Renewals) • **Settlement Servuces** 　- Expand and provide settlement services and related funding for refugees and new immigrants; 　- Settlement Concierge Service for soft landing of highly sought after talent: assistance in finding housing, healthcare, childcare, schools, spousal jobs network, etc... 　- Language assistance for foreign workers, subsidized by government • **Express Entry** 　- Partner with Federal and Provincial governments to enhance Express Entry program to better serve employers in accessing internationally sought after, highly skilled talent through online portal – government to improve search functionality through industry consultation, employers to encourage international candidate to produce profiles that can meet employer demands for talent; • **International Recruitment Campaigns** 　- Raise awareness and coordinate industry efforts for International recruitment campaigns (targeted events to targeted populations) to attract talent; 　- Encourage experienced expatriate Canadians to return to BC through marketing, international recruitment campaigns & by simplifying and exempting certain taxes when relocating back home; • **Public Relations / Marketing** 　- The Tech sector proposes building educational/ marketing content that demonstrates to stakeholders (government and the public) the economic benefit that the tech sector brings to BC and Canada. • **NOCS** 　- Federal, BC Governments collaborate with industry through joint task-force / consultation to address shortfalls and improve NOCs • **Compliance** 　- Industry would like to work with government to develop an Employer Compliance Checklist with the goal of increasing transparency with clear criteria upon which we will be evaluated in an audit. This would allow for companies to better understand the requirements and would also lead to a more efficient use of government resources during an audit.	• Needs for skilled workers should be reflected in provincial and federal immigration strategies (policy), reducing barriers for employers to hire international talent with applications evaluated on the job realities of today; • Province of BC to increase advocacy and aggressively lobby for immediate and necessary changes to streamline and advance immigration policy to deal with immediate needs of sector. • **Federal Requests** 　- Exemption/variation from LMIA for Tech TFWP; 　- If a variance is not granted, create a Sector Transition plan for the whole Tech sector, similar to what was granted to VFX/ Animation 　- Changes to the TFWP, Express Entry, BC PNP and other programs that would develop solutions to talent crisis: post-graduate work permits, renewals of work permits, elimination of Cumulative Duration, intra-company transfers; • **NOCS (Federal with Provincial assistance)** 　- Decouple immigration policy from NOCs 　- If NOCs must be used, modernize National Occupation Codes (NOC's): adjust current system to recognize the majority of tech jobs

Immigration *Continued* Removing barriers to obtain highly-skilled, specialized and in-demand international talent		
Industry	**Industry & Government**	**Government**

	• **Training Program**
	    - The sector would like to work with government to develop a training program for government workers who will be required to interface with technology companies on their immigration files. The training will provide context for our requests and an understanding of the sector's unique requirements.
	
	 • **KPIs**
	    - The sector will work with government to build reasonable KPI's to demonstrate progress in the development of a Canadian workforce in the tech sector (ie/ increased number of Canadians working in the sector, number of TFWs who transition to PR, etc...) while also considering retention losses and other considerations.
		• **BC PNP**
		    - Appeal to feds for BC PNP to increase capacity of program with more spaces, alongside specific numbers for tech and related personnel (opportunity for pilots: International Students, contract based workers, expedited processing of tech workers to meet business demands).
		    - Establish high priority stream for Tech sector applicants
		    - Consider two-tier / lower salary level requirements for entrepreneur / start-ups
		
		 • **Salary Survey & Labour Market Data Updates**
		    - Expand Tech Salary survey to provide realistic salary projections across different sized companies (start-up to larger companies across the province) with accurate data based in the regions;
		    - Conduct regular LMI update (utilizing new, emerging big data research sources such as LinkedIn) as the sector is quickly evolving.
		
		 • **Express Entry**
		    - Improve Express Entry program to better serve employers in accessing internationally sought after, highly skilled talent through online portal – improve search functionality, encourage international candidates to produce profiles that can meet employer demands for talent;
		    - Recalibration of points, providing more points for Senior Executives, & other high demand tech jobs
		    - Provide points to a foreign national who is in Canada in an LMIA-exempt category within the International Mobility Program
		    - Dedicate Officers with specialized knowledge of the Tech sector
		    - Provide 600 points for job offers of 1 year or longer
		    - Create an accelerated timeline (10 days)
		    - Remove the LMIA requirement (already in PNP)

Immigration *Continued*		
Removing barriers to obtain highly-skilled, specialized and in-demand international talent		
Industry	**Industry & Government**	**Government**

		• **TFWP**
		   - Eliminate LMIA requirements for in-demand tech and related positions (cancel recruitment requirement);
		   - Improve processing times with consideration for international mobility and competition through use of a sector wide transition plan;
		   - Rebrand the TFW program – to address public misperception and reduce controversy;
		   - Dedicated tech officers with specialized knowledge of the tech sector
		
		• **Service Standards**
		   - Establish a hot line with IRCC, ESDC / Service Canada to receive updated on applications;
		   - Employ a tech industry – immigration program liaison
		
		• **Create Fast-Tracks**
		   - Provincial advocacy for Global Skills Visa program, Trusted Employer Programs or other similarly minded programs to attract and accelerate the arrival of experienced talent;
		
		• **Tax Policy**
		   - Encourage experienced expatriate Canadians to return to BC through marketing, international recruitment campaigns & by simplifying and exempting certain taxes when relocating back home;
		   - Consider international attraction policies on tax incentives to highly skilled international workers to compete with other regions
		
		• **International Students**
		   - Create programs to retain international students (particularly those not from 4-year degree programs) for DE&I
		   - Allow study permits to incorporate co-operative / practicum work terms, rather than requiring international students to apply for each permit separately.
		
		• **Resources / Guide Process**
		   - Improve transparency in the steps necessary to hire immigrants;
		
		• **Job Bank**
		   - Improve Job Bank & matchmaking between employers and qualified candidates

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