

How talent can  
**help unlock the  
innovation potential  
of Canadian SMEs**

# How talent can help unlock the innovation potential of Canadian SMEs

*Jeffrey Carey, Senior Policy Advisor*

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## About the author

Dr. Jeffrey Carey is a Senior Policy Advisor at Mitacs, a national, not-for-profit research and training organization dedicated to advancing collaborations between industry, academia, and government in Canada, and to fostering international research networks between Canadian universities and the world.

## Acknowledgements

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For more information, contact: [policy@mitacs.ca](mailto:policy@mitacs.ca)

# Highlights

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- A key component in Canada's long-lived innovation performance difficulties is the limited capacity of the country's nearly 1.15 million SMEs to innovate.
- Research indicates that there are several key barriers or obstacles limiting the innovation performance of Canada's SMEs, including: ***access to talent, access to financing, rising input costs, and unstable market demand for their goods and services.***
- Several of these issues have been compounded by the Covid-19 pandemic and the nature of Canada's economic recovery.
- This study examines what barriers are limiting the innovation performance of Canadian SMEs and how they are using talent from work-integrated-learning (WIL) programs to address those challenges.
- Our research involves examining project applications submitted to Mitacs's Business Strategy Internship (BSI) program. This reveals that talent access is a key issue inhibiting SME innovation performance throughout Canada's innovation ecosystem.
- We see that skilled talent acquired through innovation-related WIL programs can help drive SME innovation, encourage product and market diversification strategies, technological upgrading, and the development of more sustainable growth trajectories.

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# 1. Introduction

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Canada's long-lived innovation underperformance is one of the country's most pressing economic development challenges and threats to the livelihoods of future generations. Between 2001 and 2019, Canada's gross domestic expenditures on research and development (GERD) has declined from 12<sup>th</sup> to 21<sup>st</sup> in the OECD, now accounting for just 1.3 percent of global investments into R&D.<sup>1</sup> Canada also underperforms its OECD peers on a range of innovation output metrics, ranking below the OECD average in R&D intensity and labour productivity, 18<sup>th</sup> in global patents, and 34<sup>th</sup> in both trademarks and design applications.<sup>2</sup>

While numerous factors contribute to Canada's poor innovation record, an issue of central concern to Canadian policymakers is the limited capacity of the country's nearly 1.15 million SMEs to invest in R&D, engage in innovation activities, and enhance their competitiveness in global supply chains.<sup>3</sup> SMEs play an outsized role in the broader Canadian economy, representing 97.9% of all Canadian businesses, and 12.9 million in employment (85.2% of the total private labour) in 2020. They also contribute the majority of Canada's gross domestic product (51.9% between 2014 and 2018).<sup>4</sup> But recent statistics show that fewer than one in four Canadian SMEs invests in research and development (R&D), which is a crucial part of innovation and an enabler of more radical or discontinuous forms of innovation. Research suggests that this is contributing to Canada's poor record in fostering the endogenous development of more high-growth firms, which currently account for just over five percent of all enterprises in the Canadian economy.<sup>5</sup>

**AN ISSUE OF CENTRAL CONCERN TO CANADIAN POLICYMAKERS IS THE LIMITED CAPACITY OF THE COUNTRY'S NEARLY 1.15 MILLION SMEs TO INVEST IN R&D, ENGAGE IN INNOVATION ACTIVITIES, AND ENHANCE THEIR COMPETITIVENESS IN GLOBAL SUPPLY CHAINS**

Studies indicate that several key barriers or obstacles limit the innovation performance of Canada's small and medium size enterprises (SMEs). Surveys conducted by the Business Development Bank of Canada (BDC) have found that limited talent access, R&D capacity, market knowledge, and capital access are the most prominent issues limiting performance.<sup>6</sup> Meanwhile, research conducted by the Ontario Chamber of Commerce has identified additional obstacles such as ageing infrastructure and delayed digital technology investments to be holding back SME innovation and growth.<sup>7</sup>

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<sup>1</sup> Author's calculations based on 2019 OECD Science and Technology Indicators data.

<sup>2</sup> The Conference Board of Canada. 2021. [Innovation Report Card 2021](#).

<sup>3</sup> See, for instance, Nicholson, P. 2018. [Facing the Facts: Reconsidering Business Innovation Policy in Canada](#).

<sup>4</sup> ISED (2021). [Key Small Business Statistics — 2021](#).

<sup>5</sup> ISED (2017). [Comparing Measures of High-Growth Enterprises: A Canadian Case Study](#).

<sup>6</sup> See, for instance, [Business Development Bank of Canada \(2015\)](#).

<sup>7</sup> Ontario Chamber of Commerce (2019).

Several of these issues have been compounded by the Covid-19 pandemic and its impact on Canadian labour markets. In particular, the tightening of Canadian labour markets coupled with SMEs' limited financial capacity and human resources expertise have made it increasingly difficult for Canadian SMEs to recruit workers with the skills needed to help their businesses innovate and grow. A recent survey by the Future Skills Centre and the Public Policy Forum, for instance, found that shortages of skilled workers are negatively impacting the performance of Canadian SMEs. They found that 37 percent of SMEs indicated that talent recruitment is a significant challenge and another 37 percent of respondents noted that a shortage of skilled workers had negatively affected their business.<sup>8</sup> Meanwhile, research from the Brookfield Institute for Innovation + Entrepreneurship indicates that talent deficits and other capacity constraints are forcing some SMEs to delay investment into critical digital technologies and tools, creating a growing digital divide between Canadian SMEs and their larger peers.<sup>9</sup>

In this report, we build on recent studies to investigate the challenges limiting the innovation performance of Canadian SMEs through an examination of Mitacs's application and evaluation materials. Such materials provide granular and rich data sources on innovation activities and challenges in the Mitacs innovation network.

## About Mitacs

Founded in 1999, Mitacs builds academic-industry collaborations across Canada, where top talent in Canadian and international post-secondary institutions is brought in to tackle industry challenges. Mitacs's business model is based on a strategy to apply one of Canada's core strengths — the talent and knowledge within its academic community — to an area of weakness: innovation activities in non-academic sectors. Overall, the Mitacs network includes:

- 11,990 private sector and not-for-profit organizations since 2008 that have hosted interns and fellows across Canada
- 9,425 small and mid- sized enterprises partners across Canada since 2008
- 13,229 university researchers since 2008 across 79 universities
- 94 college, cégep, and polytechnic partners (and growing)
- 109 memoranda of understanding with partners across the Canadian innovation ecosystem, including other funding agencies such as NSERC, SSHRC, CIHR, SOSCIP, MSFHR, and Genome Canada
- 54 funding agreements with international partners from 25 countries and regions, including the European Union
- Integration into 15 graduate degree programs across the country
- Agreements with 157 accelerators and incubators
- 116 business development resources, 61 of whom are co-funded with strategic organizations
- 10,455 international students have travelled to Canada for internships since 2009
- \$1,080,528,175 invested in collaborative research since 2010

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<sup>8</sup> Future Skills Centre (2021). [Supporting Entrepreneurship and SMEs: A Post-Pandemic Skills and Training Agenda](#).

<sup>9</sup> Brookfield Institute for Innovation + Entrepreneurship (2021). [Picking up Speed: Digital Maturity in Canadian SMEs and Why Increasing it Matters](#).

- 82,826 internships since 2008
- 40,140 career ready students since 2008
- 36,100 participants in professional skills courses since 2008

### Mitacs Programs

Mitacs delivers a suite of programs designed to facilitate the creation of new research connections, provide first-hand industry experience and professional skills training to students, and to provide entrepreneurial support to emerging enterprises. Core programs include:

- Accelerate offers experiential learning opportunities to college and university students as well as postdoctoral fellows by connecting and placing them with businesses, non-profit organizations, and academic researchers across the country.
- Elevate is a one-to two-year research management training program and postdoctoral fellowship that nurtures the development of research management skills among fellows that gain direct experience solving real-world industry problems.
- Globalink helps build an active connection between Canada and international partners, establishing Canada as an international nexus for research excellence through the mobility of exceptional researchers.
- MEI helps Canadian start-up companies housed in university-linked incubators or accelerators commercialize internationally.

Our primary research entailed a review of project applications submitted to Mitacs's BSI program, a new Mitacs initiative launched to help Canadian businesses and not-for-profits respond to the Covid-19 pandemic.<sup>10</sup> Under the BSI program, interns work with partner organizations to enhance their innovation and commercialization performance. The program aims to:

- a) support innovation to generate knowledge and its transfer between academic and non-academic sectors
- b) strengthen the innovation capabilities of partner organizations
- c) support the creation and ownership of intellectual property in Canada
- d) promote collaboration between industries by reducing the risk for companies to engage in innovation
- e) provide work-integrated learning and professional skills training to increase the employability of post-secondary students
- f) ensure and promote equitable access by underrepresented groups to foster inclusive innovation

Two research questions guide our analysis:

1. What issues are limiting the innovation performance of Canadian SMEs?
2. How does Mitacs programming enhance the innovation performance of Canadian SMEs?

We find that talent access is the primary issue inhibiting SME innovation performance. Building on these findings, we detail the types of innovation projects that SMEs developed through the BSI program and examine how their Mitacs intern helped

**WE FIND THAT TALENT ACCESS IS  
THE PRIMARY ISSUE INHIBITING  
SME INNOVATION PERFORMANCE**

<sup>10</sup> Mitacs (2021). [BSI Internship – Program Description](#).

them pursue their innovation goals. These findings inform our primary argument in the discussion section, specifically that talent is the key resource needed to improve SME competitiveness in Canada's post-pandemic recovery. That section further identifies how policymakers can enhance SME talent access in the Canadian economy and help drive their recovery.

## 2. Literature Review

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Within the literature examining the issue, there is a striking lack of consensus on why SMEs struggle to engage in innovation activities relative to their larger peers. Academics, consultants, and international organizations identify a wide range of challenges or barriers limiting the innovation performance of SMEs and have developed several classification systems to guide researchers and policymakers. For instance, the Organisation for Economic Co-operation and Development (OECD) recognizes four broad factors influencing SME innovation performance in innovation ecosystems: i) environmental factors such as the strength of local institutions and regulatory frameworks, ii) issues related to market access, iii) the entrepreneurial culture, and iv) SME access to talent, finance, and knowledge resources (Figure 1).<sup>11</sup> Meanwhile, other classification systems differentiate between barriers that relate to an organization's internal business processes from those that are influenced by broader competitive dynamics, industry characteristics, and societal issues.<sup>12</sup>

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<sup>11</sup> OECD (2018). [Strengthening SMEs and entrepreneurship for productivity and inclusive growth.](#)

<sup>12</sup> Choi and Lim (2017). [Contextual Factors Affecting the Innovation Performance of Manufacturing SMEs in Korea: A Structural Equation Modeling Approach](#)



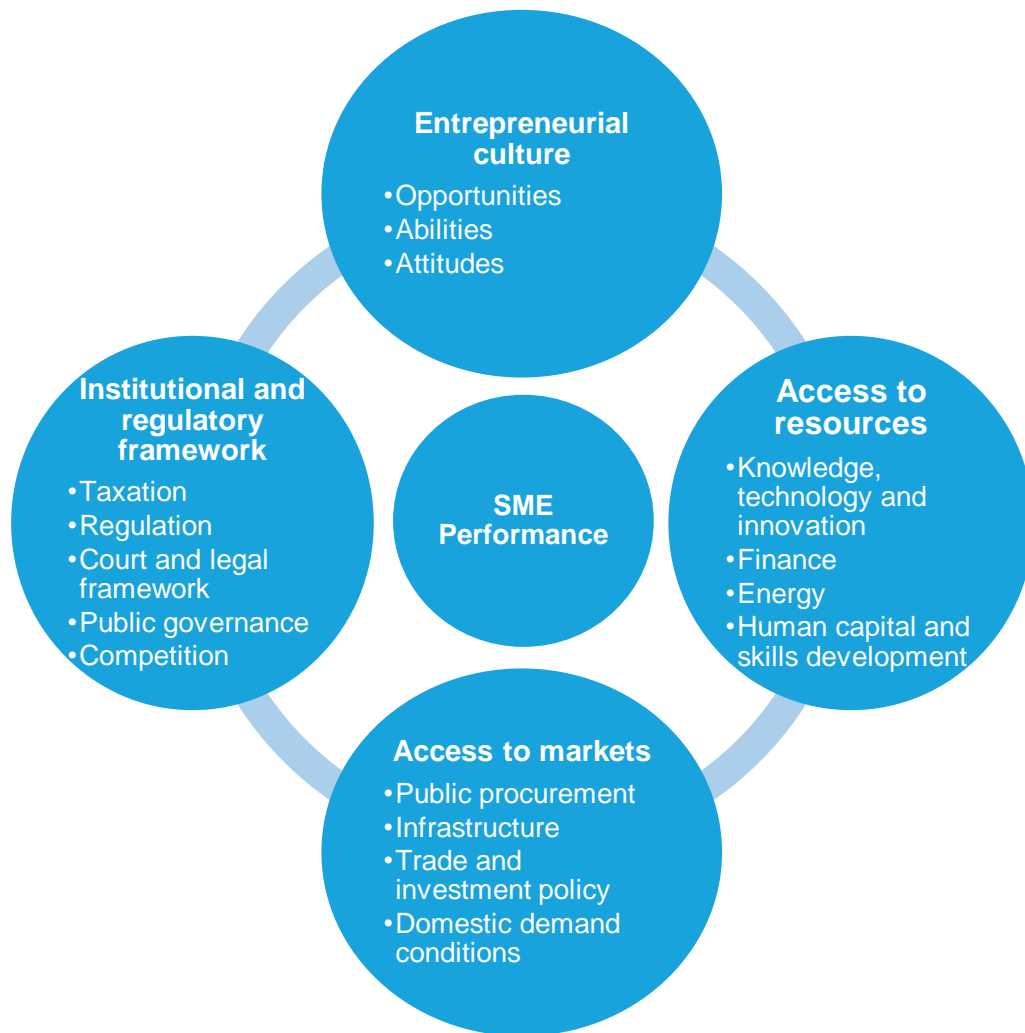


Figure 1: OECD (2018) framework of factors influencing SME innovation and competitive performance.

Further confusing matters, international research on SME innovation performance indicates that the significance of innovation barriers differs by firm size, geography, and industry. For example, McKinsey & Company's (2020) study of SMEs in OECD countries found that early-stage and innovative start-ups often face obstacles in accessing talent with technical skills and advanced machinery in their local innovation ecosystems. This contrasts with more mature and medium-sized businesses that face barriers to locating the managerial talent necessary for scaling up their operations.

Much like the international research on the subject, Canadian researchers identify numerous obstacles limiting the innovation performance of SMEs; they also recognize significant variation by industry and geography (see Appendix 1 for a record of recent studies and surveys examining the issue). With that said, three innovation barriers appear to be most pressing in the Canadian innovation ecosystem:

- 1) Many Canadian SMEs report difficulties recruiting and retaining workers with in-demand skills.<sup>13</sup>
- 2) Canadian SMEs express difficulties acquiring financing to fund the R&D investments needed to improve their innovation performance.<sup>14</sup>
- 3) SMEs cite rising input costs, unstable market demand and time constraints as barriers to their innovation and growth.

These issues have been compounded by the Covid-19 pandemic and geopolitical concerns that have placed constraints on Canada's economic recovery. Recent research suggests that Canadian SMEs now face more profound obstacles accessing talent with the skills needed to innovate and grow their operations. A study conducted by the Future Skills Centre found that SMEs' limited resources and HR expertise have made it more difficult for them to recruit, train, and retain talent than their larger peers. Their survey of SMEs found that 40% identified skills shortages as a significant competitive challenge, 37% recognized a shortage of skilled workers had affected their business, and 37% indicated that the increased labour costs had negatively affected their business.<sup>15</sup>

Additional studies have found that talent shortages are forcing some SMEs to delay investments into critical digital technologies and tools, such as those involved in Industry 4.0 and e-commerce solutions. Brookfield Institute for Innovation + Entrepreneurship research suggests that such technologies have served as a crucial lifeline for Canadian businesses, arguing that digitally intensive firms have been more resilient than the economy at large, suffering smaller drops in revenue and employment than their less digitally intensive peers. However, they also found that many Canadian SMEs have been unable to invest in critical digital technologies and tools due to their capacity constraints.<sup>16</sup> This is contributing to a growing digital divide in the Canadian economy, one in which Canadian SMEs are quickly being left behind.

Finally, research shows that Canada's tight labour markets and SME recruitment challenges are likely to persist into the foreseeable future. For example, a recent BDC survey of SMEs found that Covid-19 has increased staff hours, rising costs of wages and benefits, and limited business growth opportunities. BDC highlights three proven solutions in response to these challenges: new technology and automation, formal hiring processes, and total compensation packages. Additionally, it requires a host of active labour market policies that can help de-risk and defray SME investments into its workforce. Such investments can help unlock SME innovation activities and foster more sustainable, dynamic growth pathways.

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<sup>13</sup> Several studies show that this challenge is most stark for Canada's mid-sized businesses and scale-ups, many of which cannot compete for the highly qualified managerial and sales talent necessary to enhance their businesses (see, for example, [Deep Centre \(2016\)](#), [The Future Economy \(2019\)](#), [Future Skills Centre \(2020\)](#)).

<sup>14</sup> OECD research suggests that is partly due to the fact that nearly 85 percent of financing comes from Canadian banks, credit unions, and caisses populaires, institutions that historically have been reticent to provide funding for SME innovation ventures (see, for instance, OECD (2020). [Financing SMEs and Entrepreneurs 2020: An OECD Scoreboard](#)).

<sup>15</sup> Future Skills Centre (2021). [Supporting Entrepreneurship and SMEs: A Post-Pandemic Skills and Training Agenda](#).

<sup>16</sup> Brookfield Institute for Innovation + Entrepreneurship (2021). [Picking up Speed: Digital Maturity in Canadian SMEs and Why Increasing it Matters](#).

As this research illustrates, there are several core issues limiting the innovation performance of Canadian SMEs, including access to talent, financing, cost pressures, and unstable market demand. Such challenges have been made more acute by the Covid-19 pandemic and the nature of Canada's economic recovery. In the remainder of this report, we build on recent studies to investigate the challenges limiting the innovation performance of Canadian SMEs and how they are using WIL internships to address them.

**THERE ARE SEVERAL CORE ISSUES  
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SMEs, INCLUDING ACCESS TO  
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PRESSURES, AND UNSTABLE MARKET  
DEMAND.**

### 3. Methodology

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To gain further insight into the challenges limiting the innovation performance of Canada's SMEs, we employed a mixed methods research design consisting of a review of Mitacs BSI application and evaluation materials. In the BSI program, interns work with a partner organization in Canada on an innovation project. Interns work with their academic supervisor to co-design a project with their partner organization designed to help them improve their products, processes, or services.

The first stage of our research consisted of thematic content analysis of BSI applications submitted before September 30, 2021. SMEs were asked to identify their primary innovation challenge in the applications and explain how they intended to employ their Mitacs intern to meet their business objectives. To guide our review of the BSI applications, we used a list of innovation barriers derived from our review of the background literature shown in Appendix A (Figure 2).

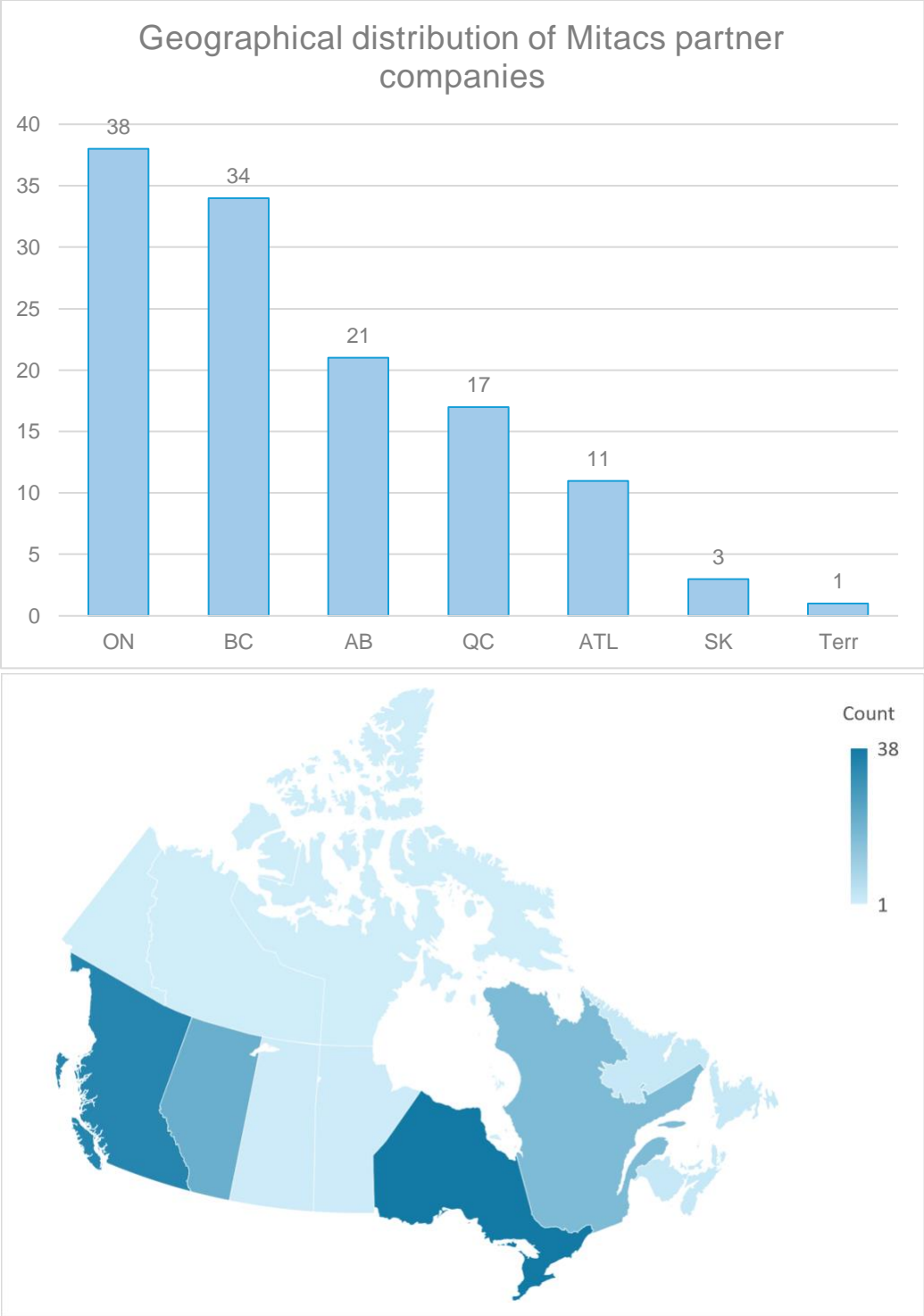
Contextual factors	Internal factors
<ul style="list-style-type: none"> <li>• Level of cooperation vs. competition in firm's industry</li> <li>• Level of cooperation vs. competition in the firm's local region</li> <li>• Access to knowledge, expertise, and machinery in the innovation ecosystem</li> <li>• Access to government programs and policies</li> <li>• Access to talent</li> <li>• Access to financing</li> <li>• Access to external markets</li> </ul>	<ul style="list-style-type: none"> <li>• Firm culture (e.g., risk tolerance)</li> <li>• Access to the necessary machinery and equipment</li> <li>• Access to internal sources of knowledge and expertise (i.e., quality of existing talent and skills)</li> </ul>

Figure 2: Common SME innovation challenges in the Canadian innovation ecosystem

We reviewed a total of 125 BSI applications, or 11 percent of the 1150 BSI projects submitted before September 30, 2021. A majority of the SMEs in our sample were located in Ontario, British Columbia, Alberta, and Quebec (Figures 3 and 4), and most of the organizations operated in the information and communication technology (ICT) and manufacturing sectors (Figure 5). Our sample also included a significant number of not-for-profits, many of which engaged in social innovation projects designed to improve their local communities.<sup>17</sup>

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<sup>17</sup> Social innovation is defined as the process of developing and deploying effective solutions to social and environmental issues.



Figures 3 and 4: Geographical distribution of Mitacs partner companies in the BSI applications

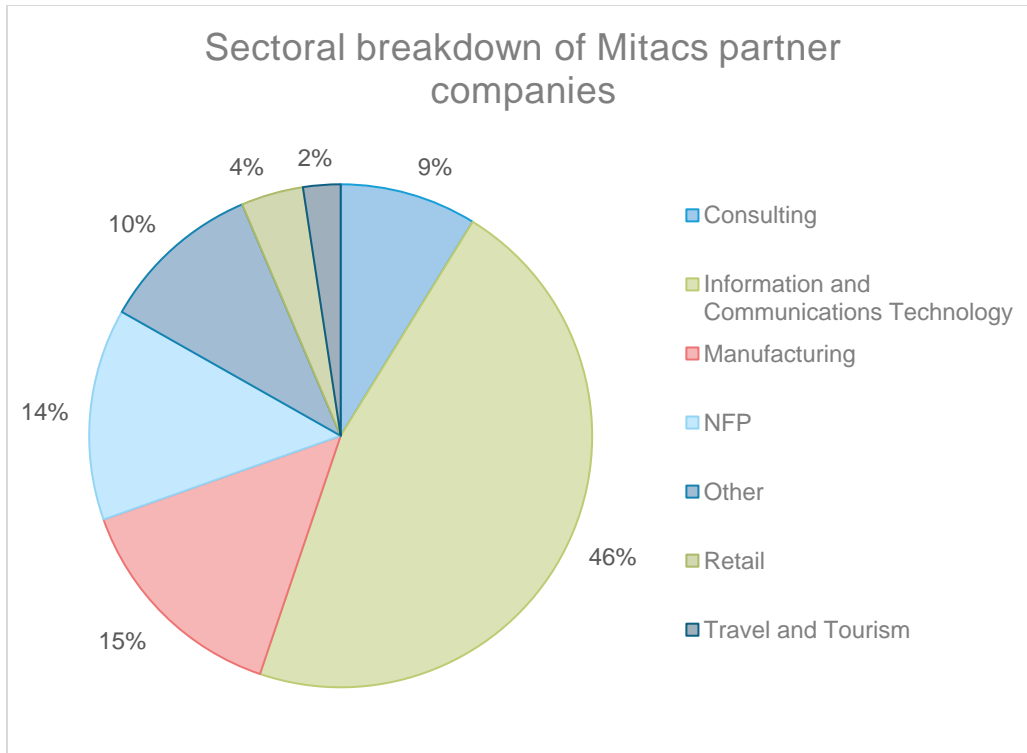


Figure 5: Sectoral breakdown of Mitacs partner companies in the BSI applications

The second stage of our research entailed the examination of Mitacs partner responses to BSI exit surveys submitted before the end of September 2021. In the exit surveys, organizations were asked what type of innovation project they conducted, how successful that project was, and to assess the performance of their Mitacs intern. In total, we received responses from 380 companies and not-for-profits.

## 4. Results

Overall, our results strongly align with recent Canadian research that recognizes talent access as the central issue limiting SME productivity and innovation performance in the Canadian economy. As illustrated in Figure 6, 62% of the SMEs in our sample expressed that talent access was their most significant innovation challenge. As Figures 7 and 8 show, talent access was the most significant innovation barrier by both geography and industry, indicating that the obstacle was most impactful throughout the Canadian economy. It must be stressed that our results likely understate the salience of several barriers for SMEs in the broader Canadian economy given that Mitacs delivers work-integrated learning (WIL) and partners with SMEs that require talent. That said, our results do align with the vast majority of studies examining Canadian SME innovation challenges.

**OUR RESULTS STRONGLY ALIGN WITH RECENT CANADIAN RESEARCH THAT RECOGNIZES TALENT ACCESS AS THE CENTRAL ISSUE LIMITING SME PRODUCTIVITY AND INNOVATION PERFORMANCE IN THE CANADIAN ECONOMY**

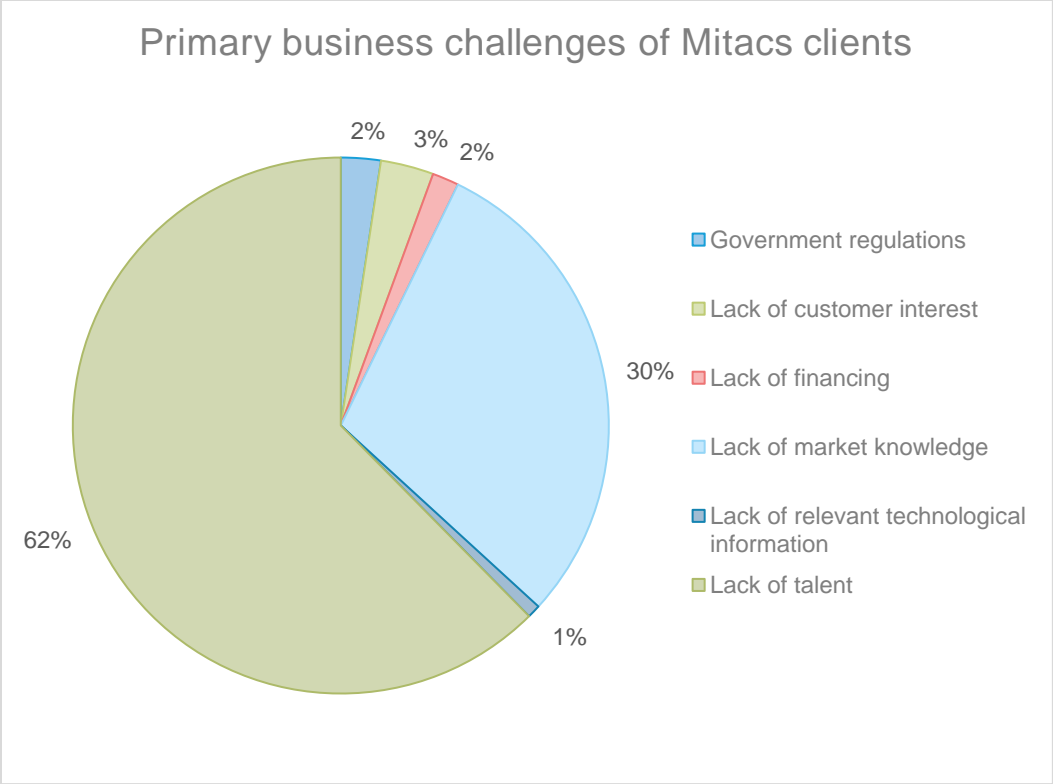
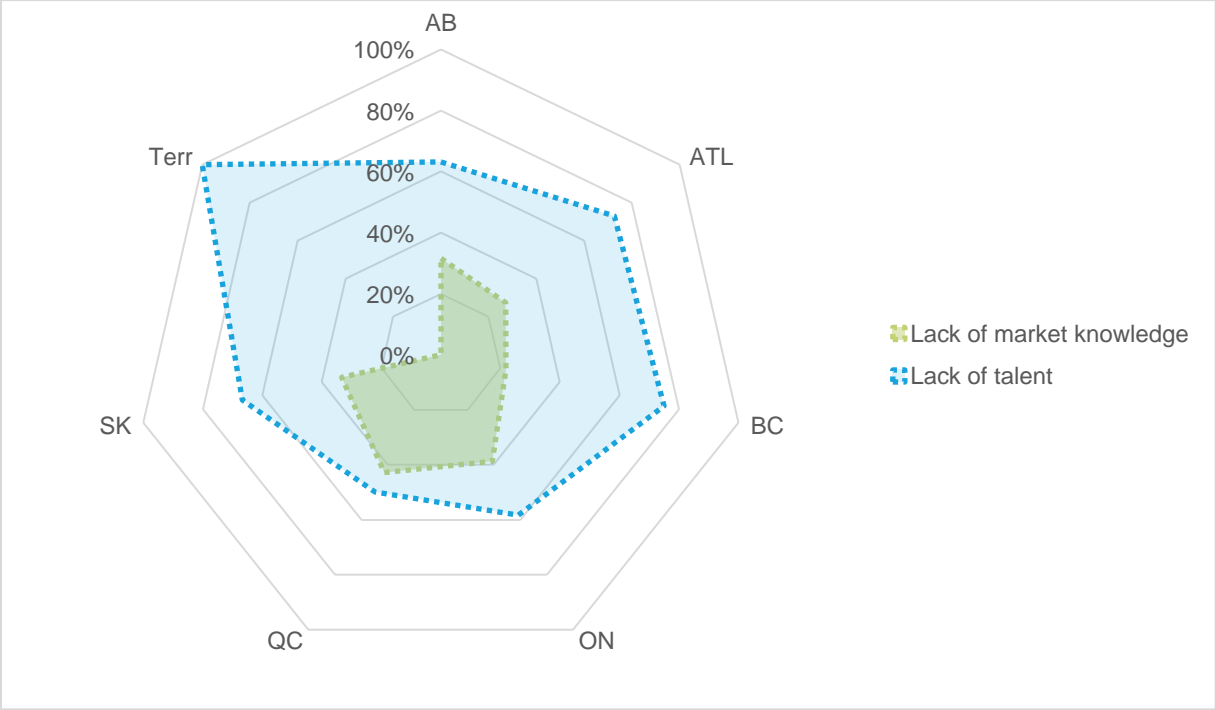
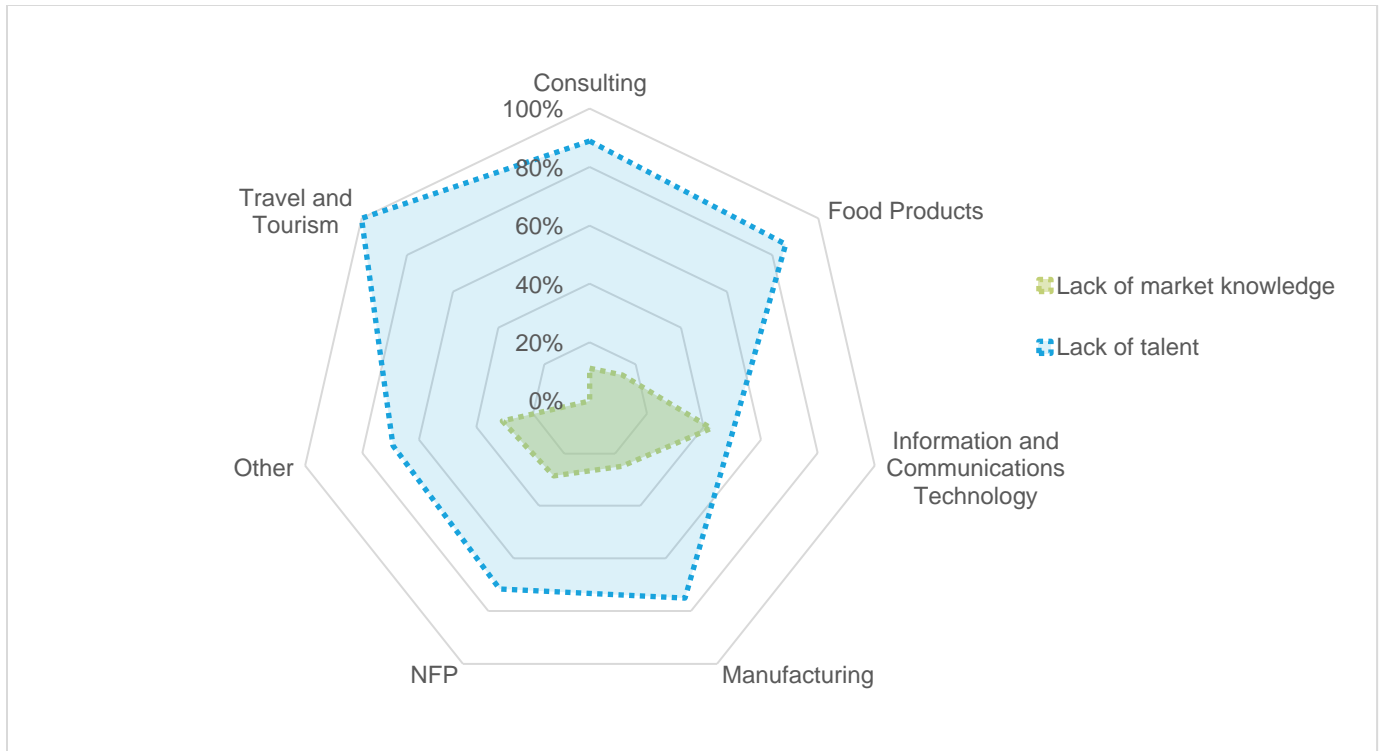


Figure 6: Primary business challenge of SMEs in Mitacs BSI applications.





Figures 7 and 8: Primary business challenge of SMEs in Mitacs BSI applications, by geography and industry

Further to talent access issues, we observed several additional obstacles to be limiting the innovation performance of Mitacs partner organizations, including lack of market knowledge (30%). Based on our review of past studies, we observed a smaller than anticipated number of the organizations in our sample identified lack of financing (2%) and government regulations as the primary factor inhibiting their innovation performance and lack of customer interest (demand) for their products/services (3%).

## 4.1. How SMEs addressed their business challenges using Mitacs talent

A closer analysis of the BSI applications revealed how Mitacs partner SMEs used their Mitacs intern to enhance their innovation performance. As Figure 9 shows, 65% of the SMEs in our sample used their BSI intern to enhance their organization's knowledge of its market by performing market research and developing targeted business strategies and plans. For example:

- An Ontario-based software company employed a Mitacs BSI intern to gain more insight into its customer preferences and develop a post-pandemic growth strategy designed to boost company revenues.
- A BC-based charity used BSI talent to identify critical stakeholders in their community and develop a conference designed to enhance its profile.

Our evaluations material further revealed that projects involving these activities were highly successful, with 96 percent of organizations reporting that they implemented some, if not all, of their interns' strategic recommendations.



Another 18% of the organizations in our sample used Mitacs talent to enhance their marketing capabilities by developing new brand strategies, digital marketing campaigns, and customer engagement solutions. Examples include:

- A community health organization based in Newfoundland and Labrador used BSI talent to develop a long-term and scalable digital marketing campaign to enhance local knowledge about their events.
- A BC-based fitness software start-up employed BSI talent to help the company pivot its customer engagement and marketing strategies from word of mouth to online in response to the pandemic.

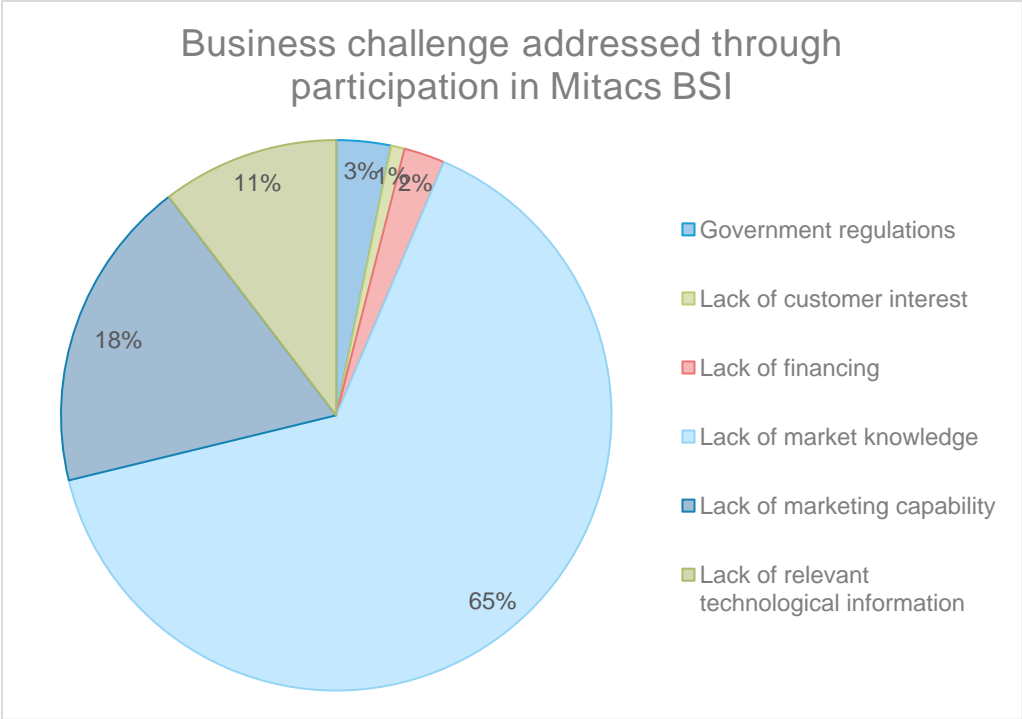


Figure 9: Primary business challenge addressed through Mitacs BSI talent.

Further to helping their host company address their immediate innovation challenges, we identified numerous examples of Mitacs interns helping their host organization pivot their operations. For instance, over a quarter of the organizations in our sample used their BSI talent to digitally transform their operations to improve business processes, value for customers, and their overall innovation performance. As recent research has shown, such transformations were critical for Canadian SME survival during the early stages of the Covid-19 pandemic and are enablers of future business success. Several examples of digitization projects developed through the BSI program include:

**OVER A QUARTER OF THE ORGANIZATIONS IN OUR SAMPLE USED THEIR BSI TALENT TO DIGITALLY TRANSFORM THEIR OPERATIONS TO IMPROVE BUSINESS PROCESSES, VALUE FOR CUSTOMERS, AND THEIR OVERALL INNOVATION PERFORMANCE**

- A BC-based wholesale and distribution company used BSI talent to pivot their business in the aftermath of Covid-19 and develop an online, direct-to-consumer sales strategy.
- An Ontario-based furniture retailer used BSI talent to pivot their sales strategy from in-person to online by developing an online showroom and online store to enhance sales.
- An ICT firm based in Newfoundland and Labrador employed their BSI intern to transform how they develop sales leads using Google Analytics.

We also identified numerous instances of Canadian SMEs using their Mitacs talent to engage in social innovation projects designed to address pain points in their communities. Of the 380 organizations that responded to the BSI exit survey, 24 percent identified that their project was designed to address a societal problem. Several examples of such projects include:

- A pharmacy in Newfoundland and Labrador that used Mitacs talent to enhance community access to pharmaceuticals and health care services in their remote community.
- A BC-based medical device company employed BSI talent to procure medical devices and Personal Protective Equipment (PPE) to assist in the provinces Covid-19 response.

The above examples demonstrate how Canadian SMEs and the Canadian economy more broadly benefit from enhanced access to high-quality and skilled talent. By enhancing access to critically required talent during the pandemic, the Mitacs BSI program helped unlock successful SME innovation. It helped some businesses successfully pivot their operations, avoiding prolonged shutdowns and potential failure. Moreover, through their innovation projects, several organizations were able to engage in social innovation projects and create meaningful change in their communities.

**BY ENHANCING ACCESS TO CRITICALLY REQUIRED TALENT DURING THE PANDEMIC, THE MITACS BSI PROGRAM HELPED UNLOCK SUCCESSFUL SME INNOVATION. IT HELPED SOME BUSINESSES SUCCESSFULLY PIVOT THEIR OPERATIONS, AVOIDING PROLONGED SHUTDOWNS AND POTENTIAL FAILURE. MOREOVER, THROUGH THEIR INNOVATION PROJECTS, SEVERAL ORGANIZATIONS WERE ABLE TO ENGAGE IN SOCIAL INNOVATION PROJECTS AND CREATE MEANINGFUL CHANGE IN THEIR COMMUNITIES.**

## 5. Discussion: Why talent is key to the recovery of Canadian SMEs

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It has become increasingly clear that Canada needs to stimulate SME innovation and produce more high-growth firms and scale-ups to bolster its economic recovery. Such firms are those that disproportionately drive growth in terms of local employment, sales, and productivity growth, and they are significant contributors to local and regional economic development. However, research shows that these firms are in short supply in the Canadian innovation ecosystem.<sup>18</sup>

As we have argued in this report, there are numerous obstacles limiting the ability of SMEs to innovate, enhance their competitiveness in global supply chains, and develop into high-growth firms. Of those, talent access is the most critical barrier limiting SME. Talent is also the key ingredient needed to unlock SME innovation performance in post-pandemic economy; it can help drive business innovation, encourage product and market diversification strategies, and set SMEs on more sustainable and robust growth trajectories. In our study, we identified numerous examples of how talent can help unlock SME innovation from our study such as:

- The BC-based wholesaler that used BSI talent to digitally upgrade their operations and pivot their sales strategy to an online, direct-to-consumer model.
- The Ontario-based software company that employed BSI talent to gain more insight into its customer preferences and develop a post-pandemic growth strategy.
- The Newfoundland and Labrador-based pharmacy that used Mitacs talent to enhance access to much needed pharmaceuticals and health care services in their remote community.

Fortunately, Canada is operating from a position of strength on the talent front, benefiting from a plentiful supply of high-quality post-secondary education (PSE) graduates and a successful immigration system that can help drive the innovation agenda forward in Canada's SMEs. Compared to its OECD peers, Canada is a top performer in developing the inputs for innovation such as human capital, R&D-based insights through its world-class PSE institutions.<sup>19</sup> It also has a labour force that is reasonably well prepared for future rounds of automation and digitization.

Going forward, Canadian governments must do more to leverage their strengths by connecting PSE talent with SMEs. One means-tested approach to achieve this aim is supporting the creation of more innovation-based WIL internships in the Canadian innovation ecosystem. Such opportunities offer PSE students critical on-the-job skill development opportunities and can help SMEs advance their innovation performance. WIL opportunities can be used to attract and

**CANADIAN GOVERNMENTS MUST DO MORE TO LEVERAGE THEIR STRENGTHS BY CONNECTING PSE TALENT WITH SMEs.**

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<sup>18</sup> ISED (2017). [Comparing Measures of High-Growth Enterprises: A Canadian Case Study](#).

<sup>19</sup> The Conference Board of Canada. 2021. [Innovation Report Card 2021](#).

retain more international highly qualified personnel (HQP) with in-demand skills, including those with technical and managerial skills that can help Canadian SMEs expand their operations and compete in the global economy. Moreover, as we have detailed in this report, WIL interns can help SMEs unlock their innovation potential and enhance their ability to contribute to Canada's economic recovery.

# Appendix A: Landscape analysis of recent studies examining Canadian innovation barriers

Study and organization	Notes
<a href="#">Small and Medium Size Employers (SMEs): Skills Gaps and Future Skills - Diversity Institute (2020)</a>	<ul style="list-style-type: none"> <li>• Explores the current knowledge concerning approaches to skills among Canadian SMEs and the areas for further research.</li> <li>• 40% of SMEs surveyed in 2019 saw skills gaps as a significant competitive challenge, up 4% from the previous year.</li> <li>• SMEs facing labour shortages are 43% more likely to experience low growth, requiring their employees to work overtime and experiencing delays in services rendered.</li> </ul>
<a href="#">Innovation and Business Strategy: Why Canada Falls Short – The Expert Panel on Business Innovation - CCA (2009)</a>	<ul style="list-style-type: none"> <li>• Argues that there is no single cause of the innovation problem in Canada.</li> <li>• Notes that the fundamental factors that influence the innovation behaviour of businesses in Canada include: (i) characteristics of the firm's sector; (ii) the state of competition; (iii) the climate for new ventures; (iv) public policies that encourage or inhibit innovation; and (v) business ambition (i.e., entrepreneurial aggressiveness and growth orientation).</li> </ul>
<a href="#">SMEs And Growth: Challenges And Winning Strategies – Business Development Bank Of Canada (2015)</a>	<ul style="list-style-type: none"> <li>• Survey of over 1,000 SME leaders across the country to gain a better understanding of growth challenges and identify the most promising strategies.</li> <li>• Recognizes a range of obstacles that limit SME growth, including lack of access to talent, lack of access to advanced machinery, insufficient access to training and upskilling, lack of market knowledge, lack of financial capacity, and the nature of their competitive environment.</li> </ul>
<a href="#">Trade and small and medium-sized enterprises – Government of Canada (2019)</a>	<ul style="list-style-type: none"> <li>• Notes that SMEs face numerous challenges when exporting and scaling up their businesses.</li> <li>• SMEs are particularly challenged with protecting intellectual property, administrative and border issues inside and outside Canada, logistics, market knowledge, and financing and insurance.</li> </ul>
<a href="#">Canadian Start-ups: Growth and Scale-up Transitions – Innovation, Science and Economic</a>	<ul style="list-style-type: none"> <li>• Found that almost 75 percent of firms that scaled up did so within the first five years of being established, suggesting that firms are more likely to expand when they are younger.</li> </ul>

<p><a href="#"><u>Development Canada, Research and Analysis Directorate (2021)</u></a></p>	<ul style="list-style-type: none"> <li>• Also found that the federal government's Small Business Deduction (SBD) and Scientific Research and Experimental Development (SR&amp;ED) Program were both positively correlated with the likelihood that a firm would scale up and with sustainable firm-level employment growth.</li> </ul>
<p><a href="#"><u>Business needs and potential solutions, May 2018 – Business Development Bank of Canada</u></a></p>	<ul style="list-style-type: none"> <li>• A Survey of Canadian SMEs found that financial barriers were the most pressing competitive challenge, followed by availability of contacts and partners, and skilled workers.</li> <li>• The survey questions could be used as templates for our BSI 2.0 evaluation materials.</li> </ul>
<p><a href="#"><u>Unlocking growth in small and medium-size enterprises – McKinsey &amp; Company (2020)</u></a></p>	<ul style="list-style-type: none"> <li>• Study of SMEs in OECD countries; identifies that SME challenges differ by firm type.</li> <li>• Early-stage and innovative start-ups often face barriers accessing the educational ecosystem.</li> <li>• Established start-ups face barriers to accessing financing and managerial capabilities.</li> <li>• Medium-size businesses face barriers to advisory and tactical business support.</li> <li>• Stagnant or struggling medium-size companies face barriers to emergency funding.</li> <li>• Microbusinesses face barriers to formal lending.</li> <li>• Locally focussed small businesses face scale-up and expansion challenges.</li> </ul>
<p><a href="#"><u>High-Growth Firms Characteristics in Canada – Innovation, Science and Economic Development Canada</u></a></p>	<ul style="list-style-type: none"> <li>• Firms that spend on research and development and invest in machinery and equipment in the current period increase their probability of becoming high-growth firms (HGFs) in the future.</li> </ul>