# Management Talent in Canada's Manufacturing Sector:

## Cause For Concern?

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## The DEEP Centre

**The Centre for Digital Entrepreneurship and Economic Performance** (DEEP Centre) is a Canadian economic policy think-tank based in Waterloo, Ontario. Founded in 2012 as a non-partisan research firm, the DEEP Centre's work shapes how jurisdictions build fertile environments for launching, nurturing and scaling companies that will thrive in an increasingly connected world. The DEEP Centre provides objective research and advice on the changing drivers of success in the global economy and the critical interconnections between technology, entrepreneurship, and long-run economic performance. Our goal is to help policy-makers identify and implement powerful new policies, programs, and services to foster innovation, growth, and employment in their jurisdictions.

## About the Management Talent in Manufacturing Project

Are small- and medium-sized (SME) manufacturers in Canada held back by a lack of executive and management talent? This project seeks to help shed light on this question through the development of qualitative insights that highlight why some Canadian manufacturing SMEs are succeeding, the primary competitive barriers facing them, and how issues related to the recruitment, development and retention of executive and management talent affect the trajectory of this cohort of firms.

Through a three-part analysis based on survey, interview, and comparative research, the study provides early insights into the specific management challenges faced by Canadian manufacturers and highlights potential implications for firm performance. The project aims to provide an initial evidence base for the development of targeted policy initiatives focused on Canada's SME manufacturing sector.

This Management Talent in Manufacturing project is generously supported by Industry Canada, Manufacturing and Life Sciences Division.

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## Executive Summary


The decline of Canada's manufacturing sector—evidenced by significant decreases in sector employment and share of overall economic activity—has been attributed to the high value of the Canadian dollar, a lack of business investment, and a host of other firm- and jurisdictional-level challenges. With respect to hiring, retention, and skills development, a number of commentators have highlighted the existence of a "skills gap" regarding middle-skill positions and skilled trades. Despite this focus on the vital role of human capital in shaping the future of Canada's manufacturing sector, little attention has been focused on the role of management talent in the growth and competitiveness of Canadian manufacturing firms.

This project is a first step towards addressing this knowledge gap. In doing so, it asks if—and to what extent—a management skills gap exists among Canada's population of small- and medium-size manufacturing firms. In addition, through a three-part analysis based on survey, interview, and comparative research, the study provides early insights into the specific management challenges faced by Canadian manufacturers and highlights potential implications for firm performance.

Through their interview and survey responses, executives in Canada's manufacturing small- and medium-sized enterprises (SMEs) clearly expressed that—in their view—a management talent gap exists. Fully 75% of firms surveyed noted significant challenges related to the recruitment of executive- and management-level talent. Moreover, when pressed to gauge the impact of this talent gap, executives pointed to significant consequences for firm productivity, innovation, and growth. Among survey respondents, 53% of firms indicated that gaps in executive and managerial competencies have led or would lead to decreased innovation. Similarly, 44% noted that such gaps would lead to a lack of sales growth, and 35% pointed to a generalized reduction in firm productivity.

According to respondents, particular management competencies are perceived as difficult to acquire for manufacturing SMEs. When asked to identify specific management competencies that are in short supply within the labour market, executives highlighted three areas of particular concern: 1) general leadership and people management; 2) new technologies; and 3) executive-level sales and marketing. The following report explores these challenges in greater detail, highlighting managerial and executive talent issues alongside other key barriers to growth described by interview and survey respondents.

Still, while Canada's SME manufacturers face a series of ongoing challenges, interviews with leaders across the country also provide reason for optimism about the future of the manufacturing sector. Interviewees cited four broad areas as key to driving sales and revenue growth in an increasingly competitive environment: 1) adapting to new competitive realities by embracing lean manufacturing and innovation; 2) focusing on product and market diversification; 3) investing in training and development; and 4) prioritizing marketing and branding as essential elements of training and corporate strategy. Across all of these areas, management talent emerges as one of the necessary elements of success.

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Indeed, for a company to thrive in an increasingly competitive twenty-first-century global innovation economy, it must be able to recruit and retain managers that can adapt to new realities, identify opportunities, and invest where necessary to propel future growth.

The results of this research also highlight three core areas for policy attention. First, management training and development initiatives are necessary to support SME manufacturers unable to properly fund and operationalize necessary professional development programs on their own. Second, sales and marketing skills must be prioritized across the sector through training and development, as well as targeted programs that assist SMEs by mitigating internal gaps in sales and marketing capacity. Third, more robust linkages should be forged between traditional manufacturers and business accelerators and incubators or similar support organizations. Accessing mentorship and expertise with respect to sales, new technologies, and new management processes—in addition to networking alongside various types of talent—is a necessary part of contemporary manufacturing competitiveness.

This project, its insights, and the subsequent policy recommendations are far from exhaustive. However, together they present a first attempt at better understanding the management talent issue within Canada's SME manufacturing sector.

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## Introduction

The decline of Canada's manufacturing sector has been well documented. As detailed in the DEEP Centre's July 2014 report, Canada's Billion Dollar Firms: Contributions, Challenges and Opportunities, over the period 2003–2012 the Canadian economy witnessed a significant contraction in the number of billion-dollar revenue manufacturing firms. This cohort of large manufacturing companies declined to just 12 publicly traded firms in the country. In addition, overall industry employment has plummeted by over 30% since 2004.[i] While the prognosis for Canada's manufacturing sector has become increasingly optimistic thanks to a reversal in the cost advantages that once accrued to manufacturing operations in emerging markets, significant challenges continue to hamper the sector's evolution in Canada.

In particular, while many Canadian manufacturers have slack capacity, questions remain as to the quality of this capacity, notably as it relates to underinvestment in capital and technological upgrades. Moreover, while growth in emerging economies and in new, technology-enabled market segments offers new opportunities for Canadian manufacturers, the capacity of Canada's managerial class to effectively exploit these opportunities remains uncertain.

Indeed, while manufacturing employment in the United States, United Kingdom, and Netherlands has either risen or remained stable since 2011, Canada's manufacturing sector has seen ongoing employment declines. The drivers for this underperformance are not well understood, yet this knowledge is crucial for both public and private actors wishing to nurture a vibrant and sustainable manufacturing industry in Canada.

Extant research efforts have been directed primarily towards understanding specific barriers in the regulatory and business environment that could be impeding the revival and resurgence of Canadian manufacturing. Research on talent-related challenges has focused primarily on the skilled trades and the impact of these shortages on manufacturers. This project seeks to make a unique contribution to understanding whether and how management and executive talent shortages impact the sector.

Building on the research findings presented in the aforementioned report on Canada's billion-dollar firms, as well as the DEEP Centre's recent publication, Future of Manufacturing in Ontario: New Technologies, New Challenges, New Opportunities, this project fills this research gap by building an analytical foundation for better understanding the management-related talent challenges facing Canadian manufacturers and the impact of these challenges on firm growth. In particular, this report focuses on the challenges facing mid-size Canadian manufacturers, here defined as those between 100 and 499 employees. It does so through a three-stage analysis of management-related challenges in Canada's manufacturing sector.

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## Project Components and Methodology

**Stage 1: Survey of Canadian Mid-Size Manufacturing Firms:** in collaboration with staff at Industry Canada, the DEEP Centre designed and implemented a survey of mid-size manufacturers to gather fact-based information on the management challenges facing this demographic of firms. Forty (40) firms were consulted in this process with appropriate regional and sub-sector distribution. This process focused on building an understanding of the key managerial competencies that are undersupplied in the Canadian labour market, the impact of these gaps on participant firms, and the actions that various stakeholders are taking to address these challenges. The survey design is presented in Appendix 1.

**Stage 2: Interview of Mid-Size Manufacturing Firms:** the second stage of the process consisted of a series of interviews with selected firm executives intended to provide more detailed data and analysis of the challenges facing this demographic of firms. Twenty (20) firms were selected for in-depth interviews. This sample of firms was developed with appropriate regional and sub-sector distribution. The interviews focused on building an inside-out understanding of the management talent-related gaps facing mid-size Canadian manufacturers, the impacts of these gaps on firm growth, and the initiatives deployed to address these challenges.

**Stage 3: Jurisdictional Scan:** the third stage developed a comparative analysis of the actions, policies, and perspectives found in other comparable jurisdictions with respect to the development of management talent in the manufacturing sector. This analysis of manufacturing-specific talent initiatives in similarly mature jurisdictions supports the development of recommendations for actionable policies and initiatives in Canada that appear in this report's conclusion.

## Existing Research

What is holding back the sustainability and growth of Canada's manufacturing sector? Several recent research projects have sought to answer this question.

Existing research on the challenges facing Canadian manufacturers has focused largely on business environment and regulatory issues. The Mowat Centre's 2014 report, Ontario Made: Rethinking Manufacturing in the 21st Century, highlighted a series of important issues related to the competitiveness of the Ontario manufacturing sector. These included business environment factors related to taxation, infrastructure, market access, and a number of cost-related factors.[ii] On the topic of skills and the Ontario workforce, the report focused exclusively on training and development for skilled trades. The role of management capacity and its impact on growth was not included in the analysis. Similarly, the Lawrence National Centre for Policy and Management's 2014 report, The Future of Canadian Manufacturing: Learning from Leading Firms, focused largely on regulatory, trade, and coordination issues as the key areas requiring attention.[iii] Other research has focused on the impact of currency dynamics, patterns of trade, and general skilled trades shortages.

Each of these issues play a role in the sector's evolution in Canada. A growing body of evidence, however, points to the presence of a "management gap" as a significant factor contributing to the sector's underperformance. As the aforementioned 2014 DEEP Centre report on billion-dollar firms reported, the lack of "go to market" experience available in existing Canadian ecosystems, as well as the inability to successfully recruit experienced management talent from abroad, is a significant drag on growth among SMEs across sectors.

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Earlier work by Roger Martin and James Millway (2012) concluded that inattention to the issue of management talent in Canada risks the country's overall prosperity.[iv] They noted that "it is short-sighted, if not dangerous, for Canada's firms to compete globally with management skills that are not as strong as they can be." A 2014 Conference Board of Canada survey of 169 Canadian companies further accentuated this perceived gap insofar as building the leadership pipeline was identified as a major challenge facing Canadian firms.[v] Finally, a 2014 study by the Business Development Bank of Canada (BDC) identified management capabilities as a key driver to underperformance among mid-size firms. In particular, the BDC noted that skill sets related to optimizing operations, developing and executing sales plans, setting overall strategy, and ensuring human resources capacity for growth were each in short supply.[vi]

Canada is not alone in this management challenge. As a well-publicized study from the United Kingdom recently reported, 87% of UK-based scale-up companies surveyed for the Scale-Up Report on UK Economic Growth indicated that they would grow faster if it were easier to both find and develop their leaders.[vii] A 2014 Heidrick & Struggles report asked, "What is required to make UK manufacturing a world leader again?"[viii] Among the key priorities identified was the development of a stronger pipeline of talent flowing into the sector, and thus a resulting upgrading of the senior executive talent pool.

Nor is Canada approaching this issue before others. In the late 1990s, a series of research reports noted the significant executive and management talent gap that was emerging across mature economies. A 1998 McKinsey article entitled "The War for Talent" concluded that a shortage of executive-level talent was already present across the United States and stemmed from both organizational and demographic factors (downsizing and ageing).[ix] As Stuart Crainer and Des Dearlove (1999) noted, "The baby boomers—born between 1946 and 1964—created a surplus of middle managers in the late 1980s."[x] Their ageing and the subsequent hollowing out of the 35–44-year-old demographic across North America has meant a significant reduction in the pipeline of talent headed for the C-suite. The authors also noted that these broader demographic trends combine with corporate downsizing to significantly reduce the number of mid-level workers available for promotion to the executive ranks, and that a "monumental lack of executive talent will last for decades and cripple companies."

This hyperbole aside, does this management- and executive-level talent challenge matter?

Here, the extant research is clear in its conclusion. A 2006 study of over 700 medium-sized manufacturing companies in the US, UK, France, and Germany by McKinsey and the Centre for Economic Performance at the London School of Economics found a statistically significant relationship between the quality of managers and management technique and corporate performance.[xi] Better-managed companies had higher total factor productivity, higher sales per employees, higher rates of growth in sales and market share, and higher stock market valuations. The study also found that "companies in more competitive sectors tended to display significantly better management practices."

***Better-managed companies had higher total factor productivity, higher sales per employees, higher rates of growth in sales and market share, and higher stock market valuations.***

A subsequent 2007 study by the same authors surveyed over 4,000 medium-sized manufacturing firms across Asia, Europe, and the United States.[xii] This larger and more diverse sample confirmed the previous findings: firms across the globe that apply accepted management practices well perform significantly better than those that do not. Perhaps more important, this larger study concluded that "the overall performance of most countries is determined not by the performance of its leading companies, but by the size of its 'tail' of poor performers." Unfortunately, this research noted that the vast majority of those surveyed made no effort to measure internal management practices. This ignorance leaves this long tail of poor performers relatively ill-equipped to develop a deeper understanding of how they could improve firm performance.

A final update of this data in 2011 added a series of new economies into the comparative analysis including Canada.[xiii] As shown in Figure 1, Canada's performance in these domestic rankings lags the US, Sweden, Germany, and Japan. And while this research shows that Canada's performance is above average when measured against a broader OECD comparator group, that Canada underperforms vis-à-vis major manufacturing competitors in comparative economies signals a major issue.

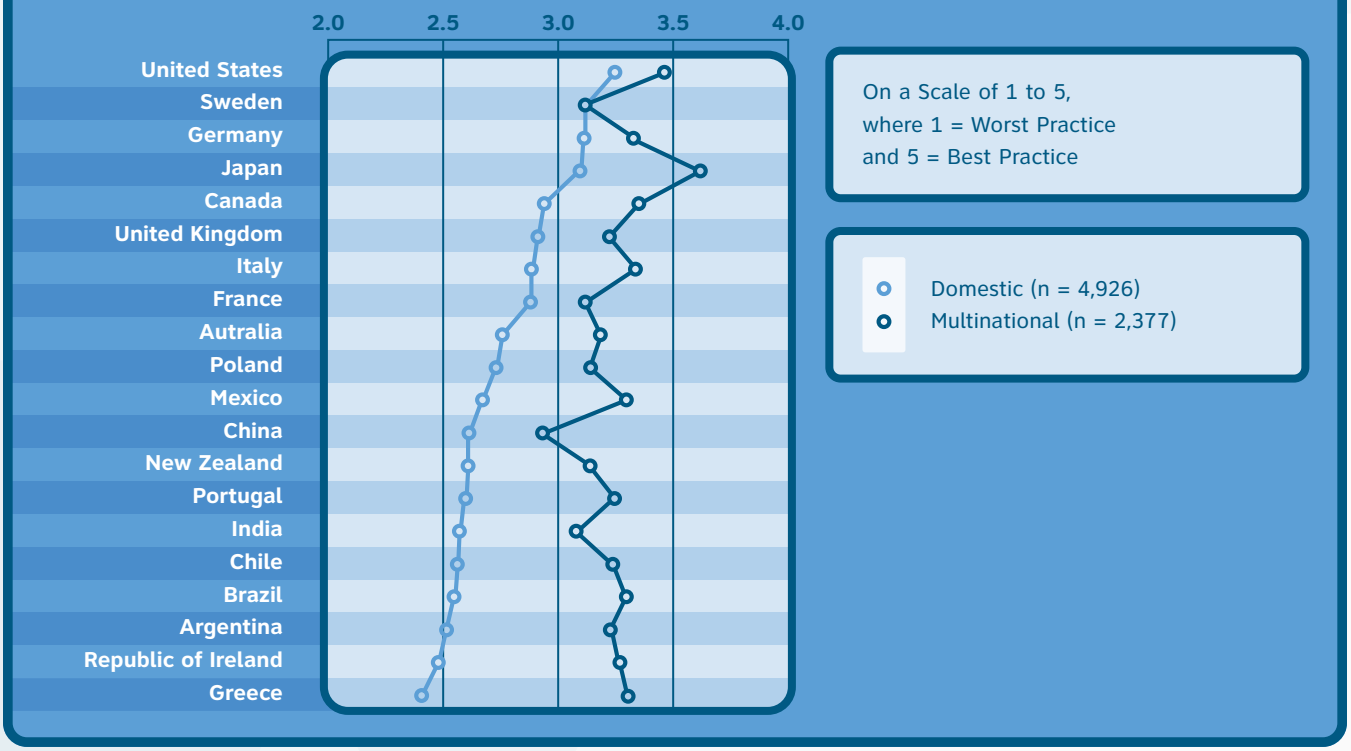
The challenge for both firms and the policy-makers who support them must thus focus on both the supply of management talent as well as the ability to develop existing talent more effectively and efficiently. This latter focus will not only drive improved micro-level performance, but also help promote and accelerate the performance and competitiveness of the entire Canadian economy.

Practice aside, there is also the question of which sectors or sub-sectors show the largest demand for senior executive talent. According to the Association of Executive Search Consultants, the top three sectors expected to experience the greatest (global) demand for senior executive talent include health care/life sciences, energy/natural resources, followed by manufacturing. While recent macroeconomic events may lessen demand for energy-related talent, in both the life sciences and manufacturing the demand will likely only grow.

Finally, survey research conducted in 2013 by Right Management—a division of the Manpower Group—highlighted that "the lack of potential leaders is the most pressing human resource challenge organizations expect to face."[xiv] This lack of future leaders was cited as the foremost concern by an average of 25% of employers globally. Among Canadian companies, this figure rises to 29%, with just 7% of Canadian companies indicating they believe they "have an ample leadership pipeline to cover most of [their] needs." While this research is helpful, it lacks breadth and specificity insofar as it does not allow for an understanding of both the impacts and the skills sets in short supply in the manufacturing sector.

Ultimately, across this extant work, it is clear in both the Canadian and global contexts that management competencies are an integral part of the competitiveness equation. What is less clear is how these gaps in management talent affect Canada's manufacturing sector. This project is subsequently designed to help address this knowledge gap and provide a meaningful, policy-relevant contribution to facilitating the growth of Canada's manufacturing industry.

**Figure 1: AVERAGE MANAGEMENT SCORES FOR DOMESTIC COMPANIES AND FOREIGN MULTINATIONALS[1]**




1 Source: Centre for Economic Performance, London School of Economics

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## **Insight and Analysis:** Management Talent in Small- and Medium-Sized Manufacturers

Through the development of both the Stage 1 survey and Stage 2 interviews with 20 small- and medium-sized Canadian manufacturers, the following insights provide a granular understanding of the issues related to management talent that impact these industry actors. This research, however, also lends itself to providing answers to several related questions. The following section highlights three areas of inquiry related to Canadian SME manufacturer performance:

1. What are the drivers for performance success among Canadian manufacturing SMEs?
2. What are the primary challenges facing manufacturing SMES in Canada?
3. What management-related issues exist for this cohort of firms?

Before delving into these qualitative insights, the survey administered to SME participants provides a high-level indication as to the prevalence of management-related challenges. Forty (40) SME manufacturers participated in the survey that was administered between December 2015 and February 2016. What follows is a summary of this data.

### Survey Data

**Table 1: SURVEY DATA**

| Survey Question | Percentage of Respondents Indicating "Yes" |
|---|---|
| **Does your manufacturing firm face challenges related to the recruitment of executive - and management-level talent?** | **75%** |
| **Does your manufacturing firm face challenges related to the retention of executive - and management-level talent?** | **36%** |
| **Does your manufacturing firm face challenges related to the development of executive - and management-level talent?** | **65%** |

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A subsequent series of survey questions has attempted to bring light to the core issues underlying these management talent gaps and challenges.

When asked, "What specific challenges does your manufacturing firm face in the recruitment of executive- and management-level talent?" the following responses are listed in order of prevalence (multiple responses permitted):

- Lack of supply in specific geographic area: 55%
- Lack of specific skills: 53%
- Inability to compete on compensation: 28%
- Lack of supply across Canada: 18%
- No challenges: 15%

When asked, "What are the executive and managerial competencies that are in short supply in your local/regional labour market?" the following responses are listed in order of prevalence (multiple responses permitted):

- General leadership and people management skills: 60%
- Technology-related competence: 40%
- Sales and marketing competence: 38%
- Financial competence: 25%
- International/export market experience: 20%
- No competencies in short supply: 15%

A subsequent question asked, "What is the impact of these gaps in executive and managerial competencies in your firm?" The following responses are listed in order of prevalence (multiple responses permitted):

- Lack of innovation: 53%
- Lack of sales growth: 44%
- Reduced productivity: 35%
- Reduced ability to attract other skilled talent: 18%
- Inability to accept new contracts: 18%
- No impact: 18%
- Reduction in company sales: 15%

Finally, respondents were asked what their firms were doing to address the challenges and gaps noted above. The majority of responses indicated some training and development efforts and/or new recruitment strategies focused on social media. This content is detailed more fully in the interview insights that follow.

## Interview Results

This data provide the first indications of a meaningful management challenge facing small- and mid-size Canadian manufacturers. In order to more fully understand this data, 24 in-depth qualitative interviews were conducted with a diverse (geographic, sector, employment base) range of manufacturers. Data collected from this process are presented below.

While the focus of this research is on the role management talent plays in the evolution of mid-size Canadian manufacturers, the information derived from the interview process provides insight into a broader range of issues facing these manufacturers. The following results are presented along three areas of inquiry:

1. What are the drivers for performance success among Canadian manufacturing SMEs?
2. What are the primary challenges facing manufacturing SMES in Canada?
3. What management-related issues exist for this cohort of firms?

### Why are Mid-Size Canadian Manufacturers Succeeding?

Across the interviews conducted with manufacturing executives in Canadian SMEs, a series of common themes emerged as key drivers of success. When asked to account for their success in an increasingly competitive environment, manufacturing SMEs experiencing strong sales and revenue growth pointed to: 1) their ability to adapt to new competitive realities by embracing lean manufacturing and innovation; 2) their focus on product and market diversification; 3) consistent focus on investment in training and development; and 4) the prioritization of marketing and branding as essential elements of training and corporate strategy. Across all these areas, management talent emerges as one of the necessary elements of success.

The following section highlights these four broad themes as key success factors underlying the competitiveness of Canadian manufacturing SMEs. In each case, the themes are accompanied by remarks shared by the executives engaged through the interview process.

#### *Adapting to New Realities*

A number of executives pointed to the importance of the 2008 global economic crisis in reshaping both the Canadian manufacturing landscape and their own corporate strategy. Among the firms that successfully weathered both the crisis and continued economic uncertainty, a number suggested that this experience forced a shift in ideas and mindsets at the senior management and ownership level. Reflecting on the importance of "never

wasting a crisis," these interviewees noted that the aforementioned period of economic instability forced them to revisit assumptions and processes that had guided their organizations. As one executive from an Eastern Canadian manufacturer noted, "We were forced to become exceptionally lean during the economic crisis. We cut back heavily and were forced to rethink how we had operated. We introduced lean manufacturing to cope with the changes. But the biggest change was to our culture—both staff and management—in order to allow these changes to be successful. We needed full top-down support for the changes that were needed. The companies, our competitors, that did not make such changes did not survive."

While several interviewees linked this aspect of change management to the crisis, others noted that it was simply an aspect of growth. These latter interviewees highlighted that too many of their peers tried to run 200-person organizations as they had 50-person organizations. The scale of the challenge organizations face between these sizes, however, is significant. As one company founder noted, "Many, if not most, SMEs have been started by entrepreneurs. But what has gotten them to 100 employees is not what is going to get them to 500. The good ones understand that. The others will not survive."

The focus on the introduction of lean manufacturing emerged clearly as a central component of the overall strategy and philosophy embraced by successful firms. As margins have shrunk and competition from abroad has grown, the search for optimization and efficiencies has taken on new importance. As one executive from an Eastern Canada food processor noted, "The bar in manufacturing has gone up in the past couple of years in terms of quality. This translates into needing to have a lot more control of your processes and the quality that is created. As a company we started to embrace lean concepts to enable this. But the biggest challenge is training and creating a lean culture. You need a top-to-bottom approach that has everyone drinking from the same kool-aid." Developing a lean manufacturing game plan, both for processes and for culture, is thus viewed as a top priority.

***Product and Market Diversification***

In addition to shifts in process and culture, interviewees cited a growing need to expand their offerings beyond traditional product lines. As one executive of a Central Canada agricultural supply company noted, "New products are key to new market share. You need to invest in innovation, not just incremental on what we have done before, but focused on new areas of application and entirely new applications." Effectively identifying and developing new products that the market wants is, in turn, predicated on investments in innovation and testing. As one auto parts executive noted, "If I cannot test a competitor's product and figure out how to design a better one I will never win. You need to invest in automation, robotics, and software to stay ahead." Making such investments amid decreasing margins was repeatedly highlighted as a major challenge. And while government programs advertise assistance for SME manufacturers, the fine print often leaves necessary capital expenditures beyond eligibility requirements.

The need to reach beyond the Canadian market—for production, sales, and skills—was also repeatedly raised by interviewees. Noting their push to expand to new markets, many pointed out that the Canadian market is far too limited and the US market at times too competitive to provide for a sustainable customer base. The ability of SMEs to successfully enter new markets and embrace export-led growth strategies, however, is often limited by the shortage of management talent that understands how to operate in those markets and navigate the various challenges that accompany outward expansion. As one executive from the auto parts industry noted, "The Canadian market just is not big enough to catalyze growth. We need to look abroad but need the management talent to do so. We need people who help us find the distribution channels to succeed in those markets, and who know how to navigate the political economy and culture of these places."

***Investing in Training and Development***

Interviewees also cited a clear need for investment in training and development. In order to navigate the changes brought upon by economic uncertainty and the introduction of new processes, several executives noted that significant resources were allocated to training and developing existing management teams. Other companies indicated that such investments were needed to help fill gaps between the skill sets and practices required for successful growth and the baseline skills of existing management. As one executive from Western Canada noted, "In order to navigate the management gap that exists in our organization we have had to invest significantly in training related to management processes, leadership development, and communication styles." Another noted, "We took our senior executive team and have been putting them through a one-day-a-month leadership training session. We need them to model the behaviour that our next generation of leaders needs to embrace."

Successful approaches to training and development are not solely based on formal programs. Rather, as the founder of one British Columbia-based manufacturer noted, the development of a compensation and incentive structure that gives all employees a stake in the company's financial success acts as an implicit training and development program. He added, "Our growth strategy and the transparent involvement of everyone in the company in developing and operationalizing this strategy means they are all thinking about how to grow the company, both top and bottom line. This is a built-in training and development function as it pushes everyone to think like a senior manager."

***Marketing the Manufacturing Opportunity***

Finding skilled people is not just a human resources challenge. Rather, in several cases, the organizations we spoke to didn't treat the search for such talent as an HR issue. Instead, they presented such talent searches as marketing challenges. As one Central Canadian agricultural equipment manufacturer noted,

Manufacturing is not sexy but innovation and technology are. In order to recruit the people we need to build a better company, we have had to be creative as to how we recruit and how we position the innovation-related challenge we are offering for the right person. Then we need to follow it up by making sure that the tools and apps they want are part of our processes.

Marketing the opportunity rather than the company is thus increasingly key to successful recruitment of highly skilled individuals. Linked to this is a need to be far more strategic in the development of company brands. While the majority of the SMEs engaged for this process have been in operation for several decades, many treated marketing as a relatively nascent addition to their corporate strategy. As one company founder noted, "Our game has changed by necessity. We need to get ourselves and our brand out there, in front of people, and forget about being a small, conservative business. We need to project ourselves—not just a product, but the company and its brand." Another noted, "Growth is primarily a marketing story, marketing in the sense of knowing strategically which market segments to enter and/or exit, and build a compelling story about how we fit."

## What are the Primary Challenges Facing Manufacturing SMEs in Canada?

While a focus on change management, investment, training, and marketing underline why manufacturing SMEs are succeeding, several factors also show a constrained and challenging environment for these firms. The following sections highlight several of the common themes that emerged in the interview process and provides direct quotes wherever possible.

### *Increased Competition Requires Increased Investment*

Competition is increasing not just from new market participants from emerging economies, but also from mature economy competitors who have consolidated with others to reap the benefits of scale. As one executive noted, this is not just an issue of cost competition. Rather, this forces smaller players to upgrade their ability to innovate, which in turn relies on management skills and capacities. This executive added, "We compete in a market that is highly competitive against companies that are multiple times larger than us. The only way we can stay in business is to innovate. Sooner or later someone is going to copy what we have done, so we need to constantly stay one step ahead of what our competition is doing. This is ultimately a people challenge—it is about understanding this challenge and having the management capacity to structure a response."

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The question of scale is referenced again as it relates to the competition for talent and the ability to compensate talent, managerial and other, adequately. SME executives consistently noted that they faced a near-constant drain of talent to larger competitors who could pay higher wages and/or offer more attractive benefit packages. That some of these larger competitors received government grants to create and/or retain jobs further raised the ire of some SME executives. As one auto parts executive in Ontario noted, "We compete against the big players for talent but they suck up the best and receive employment retention and/or training subsidies to do it."

Costs remain a significant issue for the firms we spoke with. In particular, labour and energy costs were repeatedly raised as key factors that put these firms at a competitive disadvantage. As one executive of an Ontario-based manufacturer noted, "Operating in Canada is far more expensive than the equivalent in the US. So we're growing far faster in the US and now have more employees [there] than in Canada. A decade ago we had two US plants; today, six. If we were to ever go public, the pressure to move all of our operations to the US would be immense." The decline in value of the Canadian dollar is viewed by some as a net positive, but for others, notably those who rely on inputs denominated in US dollars, the impact is far less clear. Moreover, while larger manufacturers have finance-related capacity to hedge currency movements, SMEs are, in the words of one executive, "stuck largely dealing with shifts the day after. The impact on our books is significant." This executive and several others wondered aloud if it would be possible to build a cooperative approach to currency hedging across SMEs.

***The Role of Government***

The role of government is subsequently raised both positively and negatively. Many noted that while there is significant support for innovation and research, this funding is often structured in a fashion beyond the capacity of SMEs to effectively access. As one executive noted, "We get inundated with government programs that say 'I can help you,' but the paperwork necessary to access those funds is often too much for us. It helps fund consultants but does little to help us invest in our businesses now." Further complicating this process is a lack of clarity around what qualifies for such support. "There are real limitations and fallacies about what qualifies as R&D investment in Canada, and this changes as you grow. So while we know we have to grow to survive, the programs in place to support us do not actually lend themselves to doing so."

Others are still more critical. The CEO of one Ontario-based flooring manufacturer noted, "One of the chief frustrations I have is that there does not seem to be anybody in Ottawa that wakes up every day and thinks about the competitiveness of Canadian manufacturers. Where is the vision to reinvigorate not just end producers but also middle-tier processors?" Key to the establishment of an industrial vision in competing jurisdictions is, according to this and other CEOs, a willingness to support manufacturers with a series of financial incentives structured in such fashion to align with existing trade legislation.

Finally, while support for R&D of new products is indicated by many as strong, several interviewees noted a lack of federal–provincial coordination in the provision of support and the development of incentives for manufacturers.

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### *The Importance of Marketing and Branding*

Finally, while most of the executives we spoke to noted the need to focus on innovation, equally important was an ability to fund marketing and branding initiatives. As one executive noted, "All of our innovation investments are useless if we cannot successfully sell them." This executive noted that his competition in the UK was provided with government support for marketing as part of broader industry support programs. As noted in the earlier section on drivers of success, marketing is essential to broadening firm reach into new product and geographic markets and ultimately reducing the reliance on fragile, single-sector revenue streams. As another executive noted, "We will never build to a competitive scale by selling domestically. But as we break into new markets and build the tactical plans to exploit them, it usually means we need new people—new management talent—to do so effectively. Where do we find that talent?"

While extending geographic reach is constantly raised as a key challenge, so too is the need to build better access to domestic supply chains. Here, ongoing reluctance by large firm buyers to support new innovations is viewed as stifling SME innovation and product diversification. As one executive noted, "if our buyers are not interested in innovation, i.e., if they are happy to keep the status quo on processes, then how do we get a return on our investments in innovation?" Others point the finger at both corporate and public decision makers, noting that "we are shy about saying 'Buy Canadian' despite the fact that every other jurisdiction pushes it." One executive links this domestic challenge back to marketing, arguing that to do a better job of capturing the domestic market, SME manufacturers must do a better job of communicating to potential customers that their products aren't just better but cost-competitive too.

### *Technology-Related Skills*

Finally, of most concern to every interviewee was the issue of labour. For both management positions and more junior roles, the supply and quality of labour available to SME manufacturers was noted as a major impediment to growth, innovation, and sustainability. As one executive observed, "The general talent pool for manufacturing is insufficient in both supply and quality insofar as it is not equipped for the technical challenges of contemporary manufacturing." Another executive from Central Canada similarly noted that "advances in manufacturing automation mean we need a new type of labour. Displaced traditional labour is not easily trained and/or upskilled to new roles and responsibilities that we need. Ultimately, they need to understand software as well as have an advanced set of problem solving skills, especially at the management level."

***Advances in manufacturing automation mean we need a new type of labour. Displaced traditional labour is not easily trained and/or upskilled to new roles and responsibilities that we need.***

While training and development should be part of the solution for both would-be managers and others, the financial burden of such investment was raised repeatedly as a major impediment. Moreover, as most firms do not invest heavily in training, the risk of training staff only to lose them to competitors may further reduce incentives to invest. As one executive from Central Canada noted, "The majority of companies, I mean 80%, do not train, they poach. For those who do, this means taking a major risk that that now improved asset is not going to walk out the door to someone who did not spend a dime developing them." Finally, while management training was raised repeatedly as a major driver of success, it is viewed largely as a luxury that SMEs are ill-equipped to finance or operationalize. As one executive in Ontario noted, "SMEs simply do not have the capacity to build in the management development systems that are necessary to build strong and deep management teams. The concepts of succession planning and developing others is far tougher to operationalize in companies that have grown organically and often through a small number of private hands."

## What Management-Related Issues Exist for this Cohort of Firms?

While manufacturing SMEs across the country face significant challenges, a number of firms are nevertheless surviving—and even thriving—in this competitive and increasingly globalized environment. By and large, these firms are succeeding by focusing on product and process innovations, continuous improvement in efficiency and quality, and on the implementation of lean management techniques. And regardless of location, these successful and growing firms face a similar challenge: recruiting, training, and retaining the type of top-level management talent required to facilitate further growth at home or abroad.

While these three themes are addressed separately below, they are intimately related. Difficulties faced by SMEs in finding resources to deliver training, for example, are compounded by retention challenges and the oft-cited tendency of larger firms to "poach" qualified individuals. Processes of recruitment, retention, and training must be aligned for firms to build and maintain their internal culture and competitiveness. Based on interviews conducted with company executives, the sections below aim to illuminate some of the challenges—and potential opportunities—facing these firms.

### *Recruitment*

Across interviews conducted for this study it became clear that SMEs often face challenges relating to the recruitment of both middle- and upper-level management talent. This challenge has been driven partially by a limited supply of experienced and skilled manufacturing managers available in local labour markets. At both the executive and supervisory level, respondents noted difficulties in finding experienced and qualified external applicants. This is particularly true outside of major centres and in smaller rural areas. More generally, some respondents observed that management talent in Canada was significantly less mobile than that available in the United States. At the same time, a number of respondents highlighted difficulties in persuading Americans to relocate to Canada, with climate and tax burden most commonly cited as barriers to relocation. As a result

of these and associated challenges, some respondents noted that they had partially relocated operations to the United States.[2] As the president of an Ontario-based industrial manufacturer noted, "We want to double our business in the next four years. I have the machinery and capital to do it. But I worry I won't find either the management or labour to make it happen here in Ontario."

***We want to double our business in the next four years. I have the machinery and capital to do it. But I worry I won't find either the management or labour to make it happen here in Ontario.***

A number of respondents pointed to a lack of availability of specific management-related skill sets. Some noted, for example, difficulty in finding individuals with international business experience, sales and marketing professionals, suitable plant managers, or individuals with sufficient financial experience. Many of the challenges in management recruitment, however, go beyond the availability of specific skills. Numerous respondents pointed to difficulties stemming from the need to recruit individuals that are an appropriate "fit" for the firm's internal culture. As one respondent noted, "Smaller firms have a harder time understanding the impact of culture on a company. So while larger firms can afford to hire for cultural fit, smaller ones are often forced to set that aside, or do so without knowing they've done it." In addition, a number of interviewees highlighted difficulties in finding individuals with broader strategic vision and leadership skills. As another interviewee noted, this difficulty can ultimately impact a firm's ability to succeed and grow, as managers that "can't visualize into the future" will ultimately miss opportunities and fail to foresee obstacles.

Respondents cited a number of underlying reasons for these ongoing challenges. A number pointed to the lingering stigma around the sector and a lack of interest on the part of business school graduates in manufacturing careers as a significant contributing factor. Referencing efforts to reach out to MBA classes, for example, one executive lamented that "few people are truly interested in manufacturing." These challenges are particularly salient among smaller firms, where the nature of management positions can serve as a barrier to recruitment. One respondent noted, for example, that his firm had to focus on hiring the most "flexible" talent, rather than those with the highest level of skill, because managers needed to be willing to undertake both management and clerical or administrative tasks. Some respondents, particularly in rural areas, also noted the need to provide additional financial compensation in order to attract talent. One executive summed it up simply, noting that finding "the skill sets required to propel the strategy and the affordability of those skill sets" was a significant challenge.

2 Talent attraction was typically not the only motivation for establishing or relocating operations to the US. Easier access to the American market and the more "business friendly" nature of the US—including but not limited to the availability of business supports—were also typically cited as factors contributing to location decisions.

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### *Retention*

While recruitment challenges were common across the interview sample, challenges related to retention were significantly more varied. A number of firms reported that retention was not a significant issue at the middle or senior management level. Among those who expressed concern about retention, the issue of "poaching" of middle and senior level managers—particularly after firms had invested money in training—was highlighted as a significant concern. One executive lamented, for example, that "20% of companies train, 80% poach." Even among this group, however, a certain fatalistic inevitability was embraced about the issue of competition within the labour market. As one executive noted, "You may risk getting poached, but you need to win on your own case. But we don't have a choice—we have to make investments [in people]."

### *Training*

A number of firms interviewed are investing in training. Indeed, among the sample, a number of companies see the training and development of their people as a key pillar of their growth and success. One executive noted simply that within his company, "We love training people and we want to have it as part of our culture." Others argued that effective training was a mechanism to help mitigate recruitment challenges. "If you are not finding tenured people with the experience you need," one executive argued, "then you need to bring people in and grow them." In this context, a number of respondents made favourable comments about existing government programs—most notably the Canada Job Grant—that help facilitate training.

While successful SMEs are investing in their people, significant challenges remain. Unsurprisingly, costs associated with training remain a barrier for smaller firms. In this context, one manager noted simply that his firm does not do any training "because [they] cannot afford it." These cost challenges can be amplified by a workforce that is increasingly unprepared for manufacturing careers, serving to increase the overall training burden facing smaller companies. One larger SME executive noted, "The real difficulty with respect to training is that if I want to groom someone through the management and supervisory process I need to pay 1.4 people, as I can't simply remove their responsibilities from our operations." This executive noted that existing government programs aimed at supporting corporate training and development were largely focused on the engagement of external consultants and not the provision of support for the development of in-house training programs and the defrayment of in-house costs.

***The real difficulty with respect to training is that if I want to groom someone through the management and supervisory process I need to pay 1.4 people, as I can't simply remove their responsibilities from our operations.***

Others point to the difficulty in transitioning technically focused employees to management positions that require a distinct set of "soft skills." As one executive noted, "We have tried to get some of our better performers to manage. But because they do not have practice being managers they find it difficult to make the leap. There is a bias against small manufacturers in that getting management training and soft skills training is not readily available." The challenges are even more pronounced for smaller firms, where flat structures mean there are few middle-range employees suitable for training and promotion.

## SME Development and Assistance Policies in Other Jurisdictions

Across comparable jurisdictions, policy-makers and industry representatives have sought to address a series of challenges related to management, innovation, and human capital in SMEs, particularly but not exclusively in the manufacturing sector. These efforts have been driven by perceived market failures—among SMEs generally and manufacturers specifically—which cause these firms to underinvest in management training.[xv] While barriers facing SMEs in training, recruitment, and retention are not new, growing global competition and rapid technological change have amplified the need for effective SME managers able to adapt to thrive in this challenging environment. As a report by the OECD reasons, "since a group of high-growth SMEs have been shown to be large net job creators and drivers of economic growth, enhancing the managerial skills of small firms might be justified on the basis of correcting a market failure stemming from externalities and public goods: better-managed small firms will contribute to overall economic growth and the well-being of society as a whole."[xvi] As a result, issues of management talent, training, and capacity have increasingly been subject to policy intervention through public or private mechanisms.

Though diverse, these initiatives can be grouped broadly into two ideal types. The first type, often labelled as extension or advisory services, focuses on the provision of diagnostic and management consulting services to SMEs.[xvii] As detailed in the brief case studies below, these services may be delivered directly by public agencies, through public-private partnerships, or through private sector consulting groups. The second type focuses more specifically at the individual level through training and certification of SME managers. Across the jurisdictions studied here, both types are often evident as part of a broader effort to boost the capacity of domestic SMEs.

The case studies below provide a snapshot of the initiatives being undertaken in comparable jurisdictions. Discussions with representatives from these jurisdictions highlight a series of shared challenges. Most notably, management talent and skill are increasingly recognized as important factors conditioning the success of SMEs in an environment focused on innovation and continuous improvement. As a result, long-standing programs such as the US Manufacturing Extension Partnership (MEP) are now placing an increased focus on management and workforce development issues.

Across these cases, three key themes stand out:

- Comparable jurisdictions are adopting a series of active programs aimed at upgrading the capacity of their SME manufacturers. While these programs embrace a variety of funding models, they are united in viewing the challenge of SME upgrading as one that is appropriately addressed by mechanisms that go beyond individual firms acting in isolation.
- As a result of growing global competition and technological change, management talent and management skills are increasingly recognized alongside broader skills development issues as important, competitiveness issues facing SMEs.
- Across both consulting and training interventions, there is an increasing focus on promoting a future-oriented planning within SMEs. Though specific approaches vary, they all endeavour to help smaller firms move beyond a "day-to-day" or "muddling through" approach to adopt a more strategic management method.

Before proceeding, it is worth noting that measuring the direct impact of specific policies remains difficult. While some academic studies broadly link effective training and firm performance, for example, isolating the additive impact of specific interventions targeted at SME management is highly complex.[xviii] Moreover, differences in both program delivery and domestic context make cross-jurisdictional comparison and evaluation of programs somewhat unreliable. As a result, the case studies below, while providing links to evaluative materials where applicable, do not attempt to make a direct comparison between policy models across jurisdictions.

## United States: The Hollings Manufacturing Extension Partnership

The Hollings MEP, established in 1988, operates as a public-private partnership with the goal of enhancing "the productivity and technological performance of US manufacturing, in partnership with other organizations."[xix] With a particular focus on SMEs, the program's 440 locations, 1,200 staff, and 2,800 partner organizations across the US deliver a wide range of advisory and capacity-building services supported through a mixture of federal, state, and fee-for-service funding.[xx] With total funding in the range of US$300 million—with approximately one-third provided by the US federal government in the most recent year reported (2014)—the MEP provides advisory services and management support to SME manufacturers through its broad network of affiliated experts and centres focusing on emerging technologies, improving manufacturing processes, training, and supply chain management.[xxi] The MEP centres thus play an important role in helping firms identify needs and create strategic plans while simultaneously acting as an important intermediary between these companies and more specialized support providers.

The focus of the MEP's work has varied over time and continues to vary across regions. At the same time, the program has become more focused on building greater innovation capacity among SME manufacturers. As a 2013 program review notes, the MEP has moved from a focus on lean production techniques towards the goal of increasing the "competitiveness and productivity of US manufacturing by helping small manufacturers improve their production performance and grow their business through innovation in product development and production." As part of this shift, workforce development has emerged as an important dimension of the MEP's work agenda, reflecting growing concerns about skills, hiring, and recruitment among SME manufacturers. As one MEP representative notes, "our MEPs are focused on whole business of running the business. Workforce has become a very critical part of the growth plan, and MEPs are starting to become an intermediary with education and workforce system." Moreover, while the assistance provided by MEPs to individual firms remains diverse, a number of centres have adopted a focus on "innovation engineering," conceived as a "methodical, step-by-step approach to growing an innovation success culture."[xxiii]

The MEP program is also notable for its clear and consistent focus on reporting and outcome metrics. To qualify for funding, associated centres must administer an economic impact survey to participating companies that examines issues related to job creation and retention, efficiency and cost savings, and sales and revenue growth, and high-level metrics are reported publicly through the program's annual economic impact summaries. For FY 2014, for example, the program reported that it provided assistance to 30,056 manufacturing firms, helping to create US$6.7 billion in new sales and create or retain 63,954 jobs.[xxiv] In addition to reporting outcome metrics, the survey also helps MEP centres and staff monitor and respond to ongoing challenges facing SME manufacturers, with the struggle for continuous improvement emerging as the top challenge in 2014. Despite this strong record, however, challenges remain. As a recent report prepared by Deloitte and the Manufacturing Institute noted, for example, manufacturing firms continue to underinvest in training and preparation for management roles and in the creation "of high performing teams."[xxv] Thus, despite the positive interventions of programs such as MEPs, workforce challenges persist across the sector.

## Strategic Advice: Britain's Manufacturing Advisory Service

Recognizing the need to help bolster the country's manufacturing base, in 2002 the Government of the United Kingdom launched the Manufacturing Advisory Service (MAS) to provide advice and boost the capacity of small- and medium-size manufacturers. Operating from 2002 to 2015, the goal of the MAS was to help SME manufacturers "achieve big improvements in their productivity and competitiveness by providing direct access to manufacturing experts who provide professional advice and practical, hands-on support."[xxvi] To that end, MAS deployed a budget of roughly £50 million from 2011 to 2015 to provide a series of services to SMEs. Core services included provision of a free manufacturing business review and assistance with business strategy de-

velopment. In addition, MAS acted as an intermediary to help firms establish connections to follow-on support via a network of specialist manufacturing consultants and the potential provision of matching funding for longer-term consultancy projects.[xxvii] Finally, MAS provided links an array of training resources aimed at both the management and workforce level.

Though the projects and sectors addressed by MAS varied widely, the program embraced a view of the country's broader manufacturing sector that emphasized the importance of continuous improvement in business strategy and leadership development. As one MAS advisor noted, "one of the most frequent thing [advisors] can do is challenge a company's thinking." MAS thus aimed to provide assistance to SME manufacturers that would "encourage management teams to take a step back from day-to-day tasks and to focus on the strategic direction their business is taking."[xxviii] Specific supports provided included help with business model development, financial expertise, market analysis, and sales.[xxix] The MAS Financial Expert Program, for example, was launched in 2013 with the goal of helping "companies understand the best options for accessing finance, tapping into alternative funding streams and unraveling the tax implications of innovation and expansion."[xxx] More broadly, MAS aimed to act as a trusted advisor able to help company management navigate an often complex environment of funding, training, and consulting services.

Though the program was discontinued in late 2015 with the elimination of the government's broader Business Growth Service, MAS appears to have been viewed as a useful resource by the country's SME manufacturers.[xxxi] The program's annual reports highlight both the breadth of services rendered—with a reported 12,093 business reviews and 2,341 in-depth support projects completed in 2012-2013—as well a series of successful collaborative initiatives. While future programming decisions in the UK remain uncertain, there is growing recognition of the importance of leadership and management talent development in the country's manufacturing sector. Prior to its closure, MAS reported growing interest among its client firms in issues related to leadership, management, and strategy.[xxxii] In its absence, the government has emphasized more on local enterprise partnerships as a means for delivering support.

## Diagnostics and Continuous Training: Japan's Shindan System and SME Universities

Originally established in 1948, Japan's shindan system is intended to help strengthen the country's SMEs through the provision of business diagnostics, advice, and consultation.[xxxiii] Though initially focused on business start-ups, the service has expanded over time to encompass a variety of organizational and management challenges facing Japanese SMEs. Broadly, the goal of the service is to provide assistance to Japanese SMEs through "modernization and improvement of [their] management and business plan."[xxxiv] To facilitate this, Japan has established a national network of accredited *shindanshi* (business consultants) trained and examined under a standard curriculum delivered through the country's network of SME training institutes. The curriculum itself has a strong focus on various types of business practices and management strategy, including management innovation, internationalization, and marketing and sales.

Successful completion of the training process allows graduates to become registered *shindanshi*, though to renew their designation graduates must engage in a process of continuous training and undertake active consulting work for a minimum designated period.[xxxv] The Japan Small and Medium Enterprise Management Consultant Association (J-SMECA) plays a role in matching qualified consultants with SMEs. With respect to the latter, J-SMECA works to match its member consultants—close to 9,000—with SMEs seeking help in particular areas of business. The matching service is provided free of charge, though the services themselves are generally provided on a fee-for-service basis.

In addition to the national system of training and certification provided to *shindanshi*, what differentiates shindan from other types of business education and consulting services is the linkage between the system's continuous improvement processes and access to public financial resources in Japan. As noted by Professor Kenichi Ohno, who has written extensively on the shindan model and its applicability in other countries, "reports submitted by *shindanshi* on expected profitability of business plans are an important consideration for the [Japanese Finance Corporation] when making loans to SMEs and individual proprietor."[xxxvi]

As noted, the shindan system is linked with Japan's broader SME support network, which includes a series of institutes designed to provide management support.[xxxvii] Most notably, the Japanese government's central organization for SME support, the Organization for Small & Medium Enterprises and Regional Innovation Japan, operates nine "SME universities" across the country that, in addition to providing *shindanshi* training, provide courses and events that "support the development of SME personnel."[xxxviii] Operating in various forms since the early 1960s, program participation is relatively robust, with the government reporting approximately 16,000 attendees annually.

## German Chambers of Commerce and Continued Vocational Training

Germany's system of vocational training, which combines on-the-job experience with classroom instruction, forms the basis for further and more advanced management training aimed at transitioning technically proficient employees to middle and senior management positions. In this context, the country's regionally organized chambers of commerce are central in the administration of both technical and management-level professional certifications. In contrast to North American chambers, in Germany these bodies play a more defined and legally recognized public role. Drawing their funding from both the government and compulsory membership fees assessed to domestic companies, Germany's Crafts Chambers (HWK) and Chambers of Industry and Commerce (IHK) thus have an important public function in facilitating vocational training and skills upgrading.

Both regionally organized chambers and their associated national-level organizations play an important part in the provision of management training for SME manufacturers and related professions. The 53 HWKs spread across the country are accompanied by a central organization—the German Confederation of Skilled Crafts—that acts as a coordinating body. With respect to management training, the HWKs oversee certification in business

administration to those who already hold a master's certificate in their craft or an equivalent designation. Offered on both a full- and part-time basis, the standardized curriculum outlined by the Confederation of Skilled Crafts focuses on business strategy, management, human resources, and innovation.[xxxix]

The IHK also offer a broader curriculum for its own business administration designation offered by a variety of training institutions. The training provided focuses on a variety of areas including organization, project, human resources management, corporate communications, marketing, and international business relations.[xl] In both cases, prior to certification students are required to pass a national standardized exam. Costs associated with training are generally borne by participating companies or individuals.

In addition to training, examination, and c*ertification, the c*hambers also provide an array of consulting and advisory services to local firms. HWKs tend to provide these services directly through a staff of over 800 business consultants, whereas IHKs act as a referent connecting member companies to appropriate private consultancies[xli] With respect to both consulting and training resources, the services provided by the chambers are augmented by programs and regional initiatives delivered independently or collaboratively by voluntary industry associations. In addition, the not-for-profit *Rationalisierungs- und Innovationszentrum der Deutschen Wirtschaft* (Productivity and Innovation Centre, or RKW) provides advisory and training services specifically geared towards boosting the innovation performance of SMEs.[xlii] As one analysis notes, German SMEs benefit from the work of the RWK as a result of "the increased availability of management training and consulting," as well as the broader diffusion of "innovative management techniques."[xliii]

Evaluating the outputs of this diverse and decentralized model remains difficult. It's clear, however, that Germany's small- and medium-size firms—the *mittelstand*—place a high value on employee development and training, as evidenced by their strong participation in vocational training system. The German Ministry of Economics and Technology points out, for example, that the country's *mittelstand* employ over 80% of "trainees."[xliv] Perhaps as a result, German firms report comparatively fewer challenges associated with attracting skilled labour when compared to other European countries.[xlv] At the same time, some have suggested that the country's system of vocational training focuses too heavily on technical skills, while providing insufficient attention to management capacity, particularly at senior levels. Examining the flexibility and change management capacity of German SMEs, for example, a research group from the Dresden University of Technology found that a large percentage of CEOs in small companies are "skilled workers" without "any explicit management training," and that there are "a lack of affordable offers, which—for example by structuring the training so that it contains different modules—make a qualification tailored to the needs of managers in German SMEs possible." The authors further suggest that such gaps could partially explain "the existing lack of knowledge about approaches to increase flexibility."[xlvi] Thus, despite an enviable record of training and employee development, German firms also continue to struggle with a series of management-related challenges observed across comparable jurisdictions.

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## Conclusion

The sustainability of Canada's manufacturing sector depends on a number of factors related to input costs, labour supply, and overall global economic growth. Increasingly, the impact of management talent and management skills is also recognized as a driver of firm-level competitiveness across sectors, including manufacturing. This project has sought to investigate if and to what extent Canadian manufacturing SMEs face a management talent gap, and how such issues impact these firms.

The results are clear. Seventy-five percent of firms surveyed noted significant challenges related to the recruitment of executive- and management-level talent. Sixty-five percent noted challenges related to the internal development of such talent. The impacts on productivity and growth are equally significant. Fifty-three percent of those surveyed noted that gaps in executive and managerial competencies would lead to decreased innovation. Forty-four percent noted such gaps would lead to a lack of sales growth, and thirty-five percent to a generalized reduction in firm productivity.

These impacts stem from gaps in three primary executive- and management-level competencies. Sixty percent of those surveyed noted general leadership and people management skills as being in short supply. Forty percent indicated technology-related competencies were in short supply, while thirty-eight percent indicated a lack of executive-level sales and marketing competencies were holding their firms back.

Combined with two dozen qualitative interviews with company leaders, this survey data provide the basis for better understanding the challenges facing SME manufacturers in Canada. Moreover, in light of the review of programs focused on assisting manufacturing SMEs in other jurisdictions, this work serves to help focus attention on how policy might assist SME manufacturers.

Three key issues, outlined below, stand out as deserving attention as it relates to management talent in Canadian manufacturing SMEs.

***Increase Focus on Management Training and Development:*** Across the interview and survey sample, training and development programming was viewed near-universally by respondents as an important component of talent development and long-term firm success. Nevertheless, SMEs often struggle to deliver such programming as a result of high costs—measured in terms of both financial resources and in labour hours spent—as well as a lack of in-house expertise. As a result, management training tends to be underprovided among Canada's population of SME manufacturers.

Direct public support for internal training programs can help partially address this challenge. In this context, a number of interviewees highlighted the Canada Job Grant program as providing valuable support for training initiatives. In addition, various partnership models could be effective in encouraging collaboration between

stakeholders in the provision of management training. Existing training programs, particularly the Manufacturing Management Certificate recently established by the Canadian Manufacturers and Exporters and Athabasca University, provide potential avenues for partnerships with industry stakeholders and post-secondary institutions. Outside of more formal post-secondary channels, collaborative "accelerator-style" mentorship and training programs could be established in partnership with regional organizations such as chambers of commerce, industry associations, or, where technology is the key focus, business accelerators and incubators.

Equally valuable would be the development of regional manufacturing roundtables of executives and peer learning groups intended to facilitate the sharing of insights and best practices. Such programs, aimed at top-level executives, would serve to complement in-house training programs. Executives interviewed who had participated in peer learning communities spoke to the utility of peer mentors helping them address their own business challenges. At the same time, the costs of entry to such communities can sometimes be prohibitive to SME manufacturers, suggesting a potential role for government as a convenor and partner with local associations.

***Build Marketing and Branding Capacity:*** The findings presented here highlight the essential role of marketing and branding in the success of SME manufacturers. Indeed, while research and product development is widely recognized as a key element of sales and revenue growth, it is equally essential that those processes are matched appropriately with client demand. However, despite its importance, sales and marketing often receive far less attention from firms and public bodies alike.

In this context, several interviewees noted the absence of any government support for marketing in Canada, while indicating that their competition abroad benefited from such support. Recent federal programs aimed at "going global" have made some progress on this front, allocating funds for international travel and trade show/trade fair fees. Still, while this funding is welcomed by those interviewed, they note that to successfully sell both domestically and abroad more support for marketing know-how and for the development of more modern, multilingual marketing materials would give them a significant boost.

***Develop a Robust Pipeline of Talent:*** Over the longer term, the development of a more robust pipeline of talent within Canada's manufacturing sector should also be prioritized. As such, ongoing support for initiatives that draw young talent into the sector and combat lingering misconceptions about manufacturing remain necessary, and creating and supporting such a talent base requires coordinated action on the part of industry, educational institutions, and all levels of government. Encouraging the creation of "Fab Lab" facilities—linked variously with local high schools, community organizations, post-secondary institutions, or existing business incubators and accelerators—is one potential mechanism to introduce youth to the various opportunities available in the manufacturing and provide a foundation of skills necessary to succeed in the sector. The development of manufacturing incubators could also provide a mechanism to help support innovative start-ups in the sector and provide focal points for expertise and mentorship capacity related to sales, technology, and other professional management processes. Similarly, mentorship relationships could also be enhanced through support of platforms and initiatives that encourage partnerships on innovation and continuous improvement between large firms and SMEs.

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None of the areas outlined above will fully address challenges faced by Canada's SME manufacturers. As one Canadian CEO noted, the global manufacturing industry is marked by "too much capacity chasing too little demand." The spillover into the competitiveness of Canada's manufacturing industry is both immediate and significant. Mitigating these pressures requires the development of a cadre of management and executive talent that both understands these pressures and has the strategic vision with respect to competition, new technologies, and the sales and marketing process to overcome them. While many Canadian manufacturing SMEs have struggled to do so to date, the success of a number of those interviewed for this project highlight how and with what support this success could be spread more broadly across Canada's manufacturing sector.

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## **Appendix 1:** Survey and Interview Questions

- *Does your manufacturing firm face challenges related to the recruitment, retention, and development of executive- and management-level talent?*
    - Yes
    - No
    - Other (expand)

- *What challenges does your manufacturing firm face in the recruitment and retention of executive - and management-level talent?*
    - Lack of specific skills
    - Lack of supply in specific geographic area
    - Lack of supply across Canada
    - Inability to compete on compensation
    - No challenges
    - Other (expand)

- *What are the executive and managerial competencies that are in short supply in your local/regional labour market?*
    - Financial competence
    - Export or international market competence
    - Sales and marketing competence
    - Technology-related competence
    - General leadership and people management skills
    - No competencies in short supply
    - Other (expand)

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- *What is the impact of these gaps in executive and managerial competencies in your firm?*
    - Reduction in company sales
    - Reduced productivity
    - Lack of sales growth
    - Inability to accept new contracts
    - Lack of innovation
    - No impact
    - Other (expand)

- *What is your firm doing internally to address these issues? (open)*

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## **Appendix 2:** Survey Sample

This project will focus its inquiry on mid-size Canadian manufacturers, here defined as those between 100 and 499 employees. The survey will seek a representative geographic distribution across Canadian provinces. The survey will seek input from across a broad representation of manufacturing subsectors including but not limited to the following:

- Automotive
- Aerospace
- Consumer products
- Food and beverage processing
- Machinery and equipment
- Metals and forest products
- Life sciences
- Petroleum, chemicals, and plastics
- ICT and diversified advanced manufacturing

## **Appendix 3:** Introductory Letter to Survey Participants

*Dear (first name, last name),*

*The DEEP Centre, an economic policy research firm based in Waterloo, has been engaged by Industry Canada to conduct research into key management challenges facing small- and medium-size manufacturing firms across the country. This important research will help shape future policies intended to help Canadian manufacturers strengthen and/or acquire the management competencies required to grow and compete globally.*

*To better understand the challenges firms face in acquiring top management talent, we need to hear from you. Below you will find a link to a very short survey. The survey will take 10 minutes or less to complete. All responses will remain anonymous.*

*Your participation in the short survey is appreciated. The answers you provide will help our partners in government to create meaningful solutions that address the challenges facing Canada's small and medium size manufacturers.*

*Thank you,*

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