



## **The Role of Medium-sized Enterprises in the Alberta Industrial Ecosystem**

**A Report for the Alberta Government (Economic Development and Trade) and the  
Government of Canada (Western Economic Diversification Canada)**

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## Executive Summary

The MSEs interviewed for this study were drawn from a wide array of sectors and produced a diverse range of goods and services. But overall, the companies displayed a range of remarkably similar organizational, operational and evolutionary characteristics. Although it would be misleading to attempt to describe a ‘typical’ MSE, a large majority of the firms interviewed displayed the following key characteristics:

- They are very stable. We found most medium sized companies have been in existence for 10 years and many were 50 and 60 years old and more. They are almost always privately owned so are not subject to the influence of stock markets and the pressure to produce quarter to quarter improvements, and therefore can think much longer term
- They have deep expertise. Frequently the founders had gained industry experience in a big company before branching out by themselves. This is a common but not universal experience. Almost all CEOs interviewed had a university education and many had graduate degrees. For many, their competitive advantages centered on their skilled workforce.
- They respond positively to the challenges of finding skilled people. A frequently expressed barrier to growth was lack of qualified people. Alberta MSEs have responded in various ways. One found an Alberta Innovates program very valuable. It helped to subsidize new hires (engineers) for a year or two while they learned the business and could become productive. Another provided scholarships at the University of Calgary for students to study a specific field, and then hired most of the graduates.
- There is huge attention to employee wellbeing. Likely related to the challenges of finding qualified workers, most MSEs interviewed go to great lengths to keep employees happy. This results in employee loyalty and very low attrition rates. One company had a retention rate of 99%. Another was proud to be the recipient of many “Best Place to work in Alberta” awards. Most go to great lengths not to lay off employees in a downturn.
- They focus. Most medium sized companies have a quite a narrow and sharp business focus. They know their niche very well and don’t want to stray outside it. They tend to be deep rather than broad.
- They innovate. Although some of the MSEs interviewed were reluctant to describe themselves as ‘innovators’, most were observed to have made significant innovations in terms of new products, new processes or new business models.
- Access to capital is not a huge issue. MSEs are stable, profitable businesses with good prospects, so many are prime candidates for accessing normal banking instruments – loans and lines of credit. None mentioned venture capital funding.

- Growth is not in itself a high priority. Many MSEs see themselves as being an appropriate size to serve their niche; growing beyond that would be problematic. Some saw a tradeoff between high growth and survival. Many regarded aiming for high growth as a risky strategy.
- Use of contractors is widespread. Many of the MSEs interviewed used contractors to supplement their workforce. One design firm employed hundreds of extra people for large projects. Others contracted with software developers abroad, where costs were lower than in Alberta. However, it was often stressed that this did not reduce employment in Canada as all the core personnel remained in Alberta.
- Many export. One firm had no customers at all in Canada for the first eight years it existed. But some served local markets and did not export at all. A majority of the firms we interviewed exported more than 30% of their sales revenue.
- They contribute to the community. Many companies are deeply involved in community affairs, supporting local cultural institutions, charities and industrial organizations. Such involvement was often described as a defining element of the company culture.
- MSEs operate largely outside the milieu of targeted industry supports. Use of government support programs varied considerably, but no firm interviewed was dependent on such programs. Most expressed the view that MSEs were generally not on the radar of most of these programs.
- Flight risks are mounting. Most MSEs seem happily embedded in Alberta, and have no plans to consider moving to another jurisdiction. However several expressed concern about increasing regulation and taxes compared with the US and were starting to look at relocating their business.
- The overall business environment is critical. SMEs have structural relationships with many sectors throughout the Alberta economy, especially but not exclusively with the resource sector. They tend to thrive best when overall conditions are favorable for the economy as a whole and can be severely affected when legislation and regulation is not synchronous with up or downturns.

These observations lead to the following recommendations:

**Recommendation One:** Make it a matter of standard practice to separate MSEs from SEs when assessing the needs and impacts of Alberta companies. Most of the available data on SMEs can be disaggregated in this way to some extent. It is a question of conceptualization more than analysis.

**Recommendation Two:** Revise approaches to innovation and diversification in policy such that they do not regard MSEs as transitional entities – a stage on the way to larger size – but as a distinct entity with its own characteristics and challenges. This should involve establishing more active linkage between relevant government agencies and MSEs.

**Recommendation Three:** Undertake further study of the regulatory environment as it may pertain specifically to MSEs, with an eye to discovering any special negative consequences that are in need of mitigation to keep these companies competitive.

**Recommendation Four:** Create a knowledge-management forum in which the knowledge contained in Alberta MSEs regarding management, strategy and enterprise evolution can be collected and distributed, both within the MSE segment and with small firms that might be candidates to become MSEs. This forum could be connected with the Provincial business schools and with Alberta Innovates.

**Recommendation Five:** Perform an environmental scan of Federal and Provincial innovation and industrial development policies and programs to identify potential strategies for leveraging the specific needs and capabilities of MSEs into the Provincial industrial ecosystem.

**Recommendation Six:** Encourage universities and polytechnics to engage more specifically with MSEs, especially with regards to skills development and mentoring possibilities. This could involve funded programs to place more students in MSEs and better coordinate some of the initiatives already being undertaken by many MSEs themselves.

## **1. Introduction: Medium-Sized Enterprises as Policy Issue**

For several decades, economic policy in the OECD countries at national and sub-national levels has adopted a major focus on the Small and Medium-sized Enterprise (SME). As most of the workforce in these countries is employed by smaller firms, the success of this segment is seen to be vital for the general health of any economy. Moreover, SMEs have become closely associated in the public and policy mindset with high-tech entrepreneurship and innovation. Thus, it has become a virtually universal policy goal to promote economic development and diversification by stimulating the growth of start-ups into large enterprises with global reach.

However, achieving such goals has proven to be much more difficult. The performance of both national and sub-national growth policies aimed at small firms would appear generally to have been poor. In terms of employment, the number of small firms that succeed in growing even to modest size is miniscule. The GDP contribution of the SME segment likewise has remained static, despite relative increases in the number of SMEs and decreases in the number of large firms.

Such observations, although factual, nevertheless can mislead unless the characteristics of the SME segment are examined in closer detail. Many misconceptions about SMEs stem from the rather arbitrary and inconsistent ways in which the segment is defined statistically (De Martino et al. 2012). Definitions can vary significantly from country to country and region to region. Statistics Canada classifies firms mainly according to the number of employees, although sometimes reference is made also to economic factors like turnover or even growth. Currently, a Small Enterprise (SE) is defined as having has between two and 99 paid employees, a Medium-sized Enterprise (MSE) having between 100 and 499 employees, and a Large Enterprise (LE) having 500 employees or more. In the European Union, however, the region that figures most prominently in the analytical literature on MSEs, Eurostat defines a Micro Firm as having fewer than 10 employees, a Small Firm as having fewer than 50 employees, and a Medium-sized Firm as having between 50 and 250 employees. Differences like these render most international and interregional comparisons unreliable, thus making it very difficult to establish standardized performance benchmarks.

Moreover, the employee count seldom correlates consistently or at all with other more informative characteristics of a firm. As by the Statistics Canada definition, nearly 99% of all Canadian Firms are SMEs (ISED 2016), this aggregated designation covers a huge group of enterprises that can have widely varying characteristics. Also, average firm size varies significantly by sector: e.g. “Utilities” has an extremely high concentration of LEs in Canada, whereas “Agriculture” has an SE concentration. Focussing on input factors like employment and investment can easily deflect policy attention from outputs like productivity, competitiveness, export, and so forth.

## **1.1 Deconstructing the economic contribution of SMEs**

In Canada since 2000, with variations by year and industry sector, firms with fewer than 500 employees have produced roughly 50% of GDP. But they employ well over 90% of the workforce. The remainder is produced by a very small number of LEs – typically amounting to less than 0.3% of all firms and employing less than 10% of the workforce (c.f. Leung and Rispoli 2011). Moreover, even within the SME grouping itself, productivity is skewed towards its larger constituents. MSEs, by the official definition, make up less than 2% of all Canadian firms, but they produce just under a quarter of the entire SME contribution (ISED 2016, BDC 2013). If the contribution of larger SEs (more than 50 employees) is reckoned into the calculation, this contribution starts looking more like 40-50%. This is potentially significant in that the number of SEs is increasing, while the number of MSEs and LEs is declining (Leung and Rispoli 2012; BDC 2016).

## **1.2 MSEs and policy**

These observations illustrate a fundamental problem with the SME designation as a unit of analysis for policy purposes. In Canada, this grouping is biased overwhelmingly towards *micro* enterprises – 80% of them have 10 employees or less, and 60% have 5 employees or less (Statistics Canada CANSIM 2017). Such enterprises tend to be highly individualistic – indeed many consist of or revolve around a single person. Thus, there is virtually never a policy measure or goal that will fit the needs of the whole grouping. This partly explains the historically poor performance record of economic strategies that are focussed on SEs as a general grouping rather than on specific types of SEs with high growth potential (c.f. Shane 2009).

It also indicates difficulty in inferring that policies aimed at SEs can somehow be scaled-up or adapted to the needs of MSEs. Or, indeed, that policies aimed at LEs can be scaled down. Arbitrary lumping together of MSEs and SEs has meant that MSEs are seldom singled out analytically and studied systematically as such. Thus, aside from a few superficial characteristics, relatively little is known in any depth about MSEs relative to either SEs or LEs. Even less can be verified in terms of their current or potential role in policy strategies for innovation and diversification.

Filling this knowledge gap is important, because there are indications that the MSE segment in Canada may be facing some significant challenges. Two studies conducted by the Business Development Bank of Canada (2013, 2016) observed that in other countries, notably in Europe, MSEs made contributions to GDP and to exports that were significantly disproportionate to their size, especially in high-value manufacturing industries. But in Canada, they noted that MSEs have roughly 70-80% of the productivity of LEs, even though they are still significantly more productive than Canada's SEs. They also noted with alarm that only about 0.1% of SEs cross the 100-employee threshold each year. Likewise, they indicated that very few MSEs were becoming large enterprises; a scant 2% crossing the 500-employee threshold each year. On the

other hand, a significant number of MSEs were shrinking; nearly 13% of them dropping below the 100-employee threshold each year.

Problematically, both these studies proceeded from yet another somewhat arbitrary assumption that the normal pattern of company growth is for small firms to grow first to medium size and then to large size. In other words, they tend to characterize the MSE mainly as a transitional phase. But one of the most commonly noted characteristics of MSEs is that they tend to stabilize over long periods in terms of employee numbers. Also, there is little evidence, or logic, to indicate that fast growing firms pause at the MSE stage at some point in their growth cycle. Those few start-ups that succeed in growing to large size tend to be situated in rapidly developing industrial sectors and tend to exhibit steady and sometimes rapid growth – the so-called Gazelles (Acs et al. 1997; Acs and Audretsch 1990).

Failure to probe the specific characteristics of MSEs free from *a priori* assumptions as to their structural role in the industrial ecosystem has resulted in a knowledge gap that has potentially great significance for economic diversification in the Western Canadian Provinces. Not only has the number of LEs in these jurisdictions been declining for many years, as has the number of head offices, they have very limited histories of attracting or anchoring LEs in sectors other than natural resources. MSEs may well form a critical, underexploited component of industrial development and diversification strategies in this region.

**1.3 The growth and diversification potential of the MSE segment**

Although the specifics of the role of MSEs in the regional industrial ecosystem are sparse, there are many indications that it is significant. Taking the Province of Alberta as an example, Tables 1a and 1b, indicate that in 2017 Alberta hosted just over 14 percent of the MSE cohort in Canada, most of them employing between 100 and 249 employees. Of these approximately 98% are privately owned and only about 2% are publicly owned (InfoCanada 2017).

**Table 1a – MSE Cohorts in Alberta and Canada (100-499 employees)**

Total employer businesses in Canada as of 15 March, 2017	993,990
MSEs in Canada	16,388
MSEs in Alberta	2,159
Alberta MSEs as % of Canadian total	13.17%

**Table 1b – Breakdown of Alberta MSEs by employee numbers**

<b>Company size</b>	<b>Number of employees</b>
100-249 employees	1,792
250-499	380

Source: InfoCanada 2017

Moreover, the activities of MSEs in Alberta show strong concentrations in sectors like manufacturing, professional and technical services, construction, wholesale and retail trade, and construction, all of which were noted in the most recent Survey of Innovation and Business Strategy (Statistics Canada 2014) to contribute more significantly than most other Canadian sectors to activities associated with innovation. As shown in Table 2, just over 55% of Alberta MSEs fall into these categories.

**Table 2 – The NAICS footprint of Alberta MSEs (innovation-intensive sectors in bold)**

NAICS code	Description	Number of Firms	Percent
11	Agriculture, forestry, hunting fishing	19	0.5
21	Mining, quarrying, oil and gas extraction	79	2.2
22	Utilities	21	0.6
23	<b>Construction</b>	<b>384</b>	<b>10.9</b>
31	<b>Manufacturing</b>	<b>86</b>	<b>2.4</b>
32	<b>Manufacturing</b>	<b>77</b>	<b>2.2</b>
33	<b>Manufacturing</b>	<b>224</b>	<b>6.3</b>
42	<b>Wholesale trade</b>	<b>341</b>	<b>9.6</b>
44	<b>Retail trade</b>	<b>425</b>	<b>12.0</b>
45	<b>Retail trade</b>	<b>190</b>	<b>5.4</b>
48	Transportation and warehousing	102	2.9
49	Transportation and warehousing	14	0.4
51	Information	52	1.5
52	Finance and insurance	110	3.1
53	Real estate & rental & leasing	99	2.8
54	<b>Professional technical scientific services</b>	<b>246</b>	<b>7.0</b>
55	Management of companies and enterprises	2	0.1
56	Administrative & support & waste management	95	2.7
61	Educational services	81	2.3
62	Health & social assistance	241	6.8
71	Arts, entertainment, recreation	102	2.9
72	Accommodation and food services	239	6.8
81	Other services (except public administration)	176	5.0
92	Public administration	129	3.7
		3534	100

Source: InfoCanada 2017

Note: InfoCanada provides data for NAICS codes and SIC codes, in two and four digits. The totals in Table 1 exceed the total number of MSEs reflecting that some companies can be classified in several NAICS codes.

#### **1.4 What we need to know about MSEs in the industrial ecosystem**

Distributions as shown above strongly suggest that there may be consequences unless we acquire a much better understanding of the structural position of MSEs within the industrial ecosystem, the factors that might affect growth within the MSE segment, and what the

potential might be to expand and leverage this segment to diversify and sustain regional and national economies.

To begin exploring some of these factors, this study focused on five pragmatic questions:

- *What are the origin, governance and growth characteristics of MSEs in Alberta?*
- *How do MSEs sustain themselves in the industrial ecosystem?*
- *What unique contributions do MSEs make to the Alberta economy?*
- *What induces MSEs to remain in Alberta, and what makes them susceptible to takeover and being moved out of the Province?*
- *Do MSEs have different needs from government than small and large firms?*

To begin addressing such questions, we must first look at some of the relevant theory and evidence globally as to how MSEs should be defined, characterized and investigated.

## **2. Unpacking the MSE phenomenon**

Owing to the arbitrary definition of “SME” as a category, very little of the literature deals specifically with MSEs, and virtually none of this references Canada. Countries like Germany and Italy figure significantly in the literature because, historically, MSEs can be seen to have occupied particularly visible specialized roles in the development of their industrial ecosystems. Indeed, in Germany, the so-called “*Mittelstand*” is widely considered, not altogether accurately, to be a unique structural characteristic of the German industrial system. However, such literature as does exist tends to indicate that the MSE segment is quite different from the SE or LE segments, with different structures, motivations and management practices.

### **2.1 The “*Mittelstand*”: a model for MSE analysis and policy?**

Whether as foreground or background, the German “*Mittelstand*” has become probably the most commonly recurring trope in discussions of the role, structure and dynamics of MSEs worldwide. Since the 1950s, many claims have been made to the effect that this form of industrial organization has been a major reason for the protracted competitiveness and high productivity of the German industrial economy, even in the face of increasing competition from low cost economies in Asia and elsewhere.

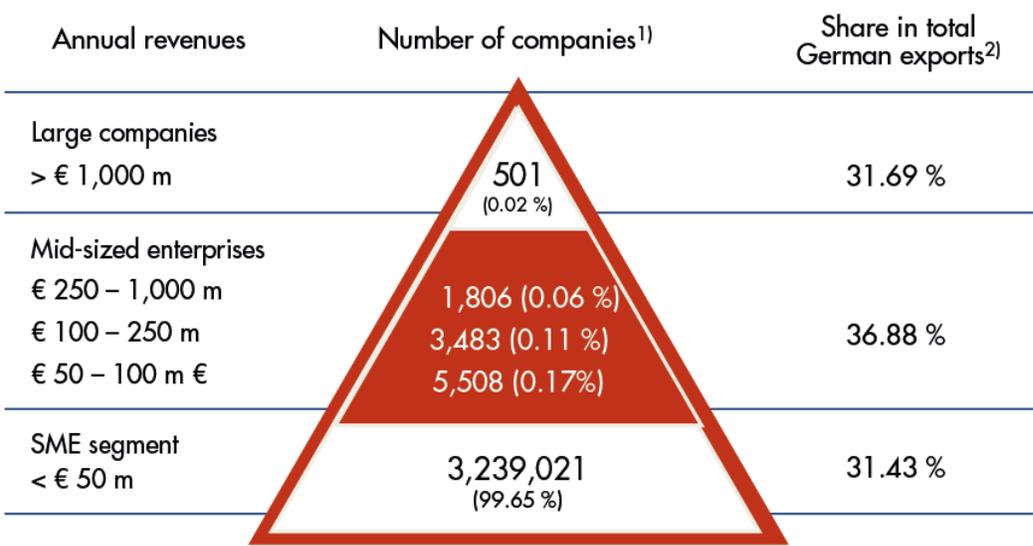
Meyer-Stamer and Wältring (2000) explain that the term “*Mittelstand*” describes an historical social dynamic, rather than strictly an industrial or economic one: corresponding roughly to what in English would be called the “Middle Class”. In German culture, this has long been associated with highly-skilled craft-based and somewhat paternalistic family businesses. Perhaps the most persistent characteristic of the *Mittelstand* is the predominance of Family-owned and entrepreneurial “founder” firms, only a tiny percentage of which are in public ownership. However, Meyer-Stamer and Wältring (2000) point out that the contemporary relevance of this segment in Germany has not been buttressed by policies aimed specifically at

the small business sector, but by the holistic German approach to industrial policy whereby policies for the whole industrial ecosystem have been constructed to recognize, promote and leverage the specific capabilities and skills of the smaller business segments.

As is Canada and most OECD countries, the *Mittlestand* can be seen consistently to contribute 50% or more to the German economy. However, not every nominal *Mittelstand* firm operates in the same orbit in terms of economic impact. In terms of size, most *Mittelstand* companies fall broadly within the European SME designation. But *Mittelstand* heritage and characteristics apply also to many larger enterprises. For example, in the optics industry, the Carl Zeiss Foundation and Leica AG embody most of the commonly identified *Mittelstand* characteristics, but each now employs well over 1000 workers.

Venhohr et al. (2015) argue that the size of a typical *Mittelstand* company is less important in terms of its impact on the German economy than how it is organized and governed, its ownership and financial structure and, most importantly, its relationship to its workers, its products and to the various supply and value chains in which it is situated. They draw attention to the strongly export-oriented manufacturing focus of the *Mittelstand*, and to how products are situated in supply chains and markets. Smaller German manufacturing firms do not try to compete mainly on price. Rather, they compete on highly differentiated, often specialized product criteria, often mechanical components, that enter the market with relatively high price:quality ratios. In other words, they tend to ‘make’ rather than ‘take’ prices, and to develop strong positions in essential high-value supply chain niches.

Figure 1 – Profile of German the *Mittelstand*



Source: Venohr et al. (2015)

As shown in Figure 1, Venhor et al. (2015) stress that there are **two tiers of *Mittlestand***. The largest group corresponds roughly to the conventional Small Enterprise definition, which they

call the “classic” *Mittelstand*. But by far the greatest impact in terms of revenues, exports, investment in innovation and contribution to GDP is contributed by a much smaller number of high-performing mid-sized firms belonging to an “upper” *Mittelstand*.

Basically, what all of this indicates is that if the *Mittelstand* is making a special and unique contribution to the German economy, this is based less on how large or small these companies may be, but more on what and how they produce, how they are organized, and how they are integrated into the broader industrial ecosystem. Thus, growth in the segment must be reckoned not only in terms of how many small firms grow into MSEs, or MSEs into LEs, but upon growth in revenue and productivity overall for the whole segment, relative to the market structures and supply chain characteristics of the various sectors in which different *Mittelstand* tiers participate.

## **2.2 The MSE in broader context**

The role of the *Mittelstand* in the success of the post-war German economy is as much the product of how it has been integrated into the broader industrial ecosystem as it is the product of any unique characteristics of these firms as such. This is important to stress because *Mittelstand*-like enterprises can be found in other countries whose economies have fared very differently. As Cassia and Columbelli (2010) point out, whereas in some regions Italian MSEs with virtually identical characteristics to the *Mittelstand* often do well, the Italian economy has always significantly underperformed the German economy.

However, in their econometric study of *Mittelstand*-like companies in the State of Bergamo (one of the Northern Italian States with a well-documented MSE concentration) they also provide some granularity in understanding why and how MSEs grow. First, they found that contrary to many assumptions, the MSE was not a stage on the way to larger size. Growth was mainly achieved in terms of profits, which were much higher than those of SEs. However, there were indications also that a factor in curtailing growth was that MSEs had less flexibility in terms of responding to changing market conditions and labor costs. But this was also noted to be a likely factor in stimulating MSEs to be proactive in developing existing markets, promoting new ones and introducing financial innovations within the firm.

The Cassia and Columbelli (2010) study is one of very few that delves analytically into the MSE as a distinct entity. There is not yet an entirely coherent body of literature that focusses specifically on the MSE, although some parts of the literature on the characteristics and operations of the firm in general impinge significantly on matters relevant to the MSE.

The literature on “family” and “founder” firms is especially relevant here. As we noted above, in Alberta, MSEs are almost entirely privately owned, which is consistent with a high degree of family or founder control. The literature defines “founder” firms as being started, controlled and managed by entrepreneurs – more-or-less in the classic Schumpeterian model of the heroic “new man” (sic) who creates the “new firm” (Schumpeter 1939). The “family” firm designation

refers more to the engagement of family members in the business as opposed to assumptions as to the entrepreneurial nature of the enterprise.

A theory commonly applied to comparing and contrasting behaviors in such firms is “socioemotional wealth” (Gomez-Meija et al. 2011) – wealth perceived in terms of social status and continuity rather than strictly monetary gain. This may underpin many observations as to the different motivations and behaviours exhibited by MSEs more generally, and the challenges that face them. For example, there is evidence that family and founder firms tend to have stronger orientations to personalities and personal objectives (Zahra et al. 2009), but also that this may have implications for how knowledge crucial for innovation is retained and managed. Durst and Wilhelm (2011) indicated that MSEs have normally a lower staff turnover, which has loyalty advantages but can lead to management overconfidence that talent will remain within the firm.

Evidence as to the capacity of MSEs to innovate is still rather mixed. For example, some evidence indicates that the propensity to undertake R&D can vary as between family and founder firms, but not in any consistent way. DeMartino et al. (2012) suggests that in MSEs, much will depend upon whether the innovation is radical or incremental, and conclude that the primary differences between LEs and MSEs in this respect center on scope and reach – MSEs focussing on innovation within existing market relationships, LEs being more comfortable with the risks of opening entirely new markets. This is somewhat reinforced by Vora et al, (2011) who noted that the entrepreneurial orientation of the MSE was defined largely by internal organizational and human resource factors.

### **3. MSEs and growth**

It has become normal in policy thinking to assume that the best future for small firms is to grow into large ones. The MSE is often regarded as a stage along that pathway, with the two main roadblocks seen as obstructing growth from SE to MSE and then from MSE to LE. Unfortunately, the statistics have never confirmed this as a normal pathway. The low incidence of growth following this pattern noted above for Canada is typical for most OECD countries. But the focus on employee size masks the fact that MSEs grow in many other ways, and that they may face special challenges in so doing.

The most common way that firms grow is simply by taking market share away from other firms. However, some firms create new sources of value – they innovate – in which case they start out with a large or even the entire share of a new market. This usually declines over time as imitators emerge. Growth in the economy overall is a long-run phenomenon stemming from this cycle of adoption, imitation and improvement (Nelson and Winter 1982, Freeman and Soete 1997, Swann 2009).

As Baumol (1959) observed, the reasons for firm growth can vary with the type of enterprise and how it is governed and financed. Moreover, firms may perceive growth in different ways than might register in the GDP statistics, for example, officials in publicly-traded companies can

perceive growth in terms of increased shareholder value, rather than increased revenues. But any firm may see certain generic advantages to growth, like achieving economies of scale in procurement, or insulating itself from competitors. Most theories of the firm gravitate to the view that in some way or other, firms will grow to the extent that their resources and productive capacities can be managed efficiently (c.f. Wilson and Toms 2012; Penrose 1959; Chandler 1990). This resonates both with theories of adaptive efficiency or absorptive capacity (Cohen and Levinthal 1990), and with transaction costs (Coase 1937; Williamson 2002). Firm growth may also be governed by the opportunities and constraints imposed by human resources (c.f. Marsden 1999), including how personnel are trained and integrated into the workplace.

Most interesting in the present case are the reasons for firms *not* to grow – to “plateau” – remaining at a more-or-less consistent size in terms of employee numbers while remaining competitive or even growing market share and revenues. Most studies tend to indicate that MSEs are distinguished from SEs in that typically MSEs exist at roughly the same size for much longer periods – typically decades. But why this is so remains an open question in the literature. Conventional theory would predict that for every firm there is an optimal size in terms of employee numbers and product range. Scaling up or down would increase risk. But it could also present strategic opportunities. Within this framework, one explanation for the “plateau” phenomenon would be that the specialized nature of what many MSEs do, plus the niche strategies many have been shown to adopt, would work against any logic of scaling up if seen just in terms of employment.

However, as Cassia and Colombelli (2010) demonstrated, such criteria do not preclude growth in terms of market share or profits. Thus, we could speculate that MSEs prosper because they find an optimal configuration of human and technological resources that allows them to do more with less, and to manage risk more effectively. However, the family and founder firm literature would suggest that there are also more subjective reasons, like those inflecting ownership and governance structure. Zahra et al. (2000, 2009) indicate that for MSEs, such factors are particularly significant, yielding both advantages and disadvantages in different circumstances. Mair and Thurmer (2008) indicate possible issues with incorporating middle management into strategic decision making in MSEs, especially concerning incorporation of their expertise into strategic decision making, and Roth (1992) found that MSE archetypes oriented to exploiting narrower positions in the value chain tended to fare better with internationalization strategies than more broadly oriented MSEs.

The extent to which the MSE may constitute a growth goal for SEs, or a stage in the growth trajectory of SEs into large ones remains an open question. However, relative longevity and stability in the MSE sector as observed in Germany, Italy and elsewhere would tend to marginalize the latter possibility. In a longitudinal study of 60 growth firms of various sizes, Hamilton (2011) noted that growth in LEs was discontinuous and tended to occur in periodic steps, whereas growth in SEs was more continuous, suggesting that interpolating an “MSE stage” in the growth trajectory of such firms would be redundant. In one of the few studies focussed specifically on growth from SE to MSE, a study of over 262 young high-tech firms in

Sweden, Saemundsson and Dahlstrand (2005) found that those SEs who made progress toward the MSE threshold were those that focused more on existing market knowledge than new market knowledge. This may however constitute a source of advantage; e.g. there is evidence that serially successful entrepreneurs generally tend to follow innovation strategies that focus on leverage of existing market knowledge (c.f. Dew et al. 2011).

To sum up, the literature tends to indicate a reasonably consistent set of characteristics for MSEs that would seem to apply regardless of the nature of the product or service provided or the location of the enterprise:

- MSEs tend to be private companies, often family owned and operated, and thus prone to longer-term planning, unconstrained by share value.
- MSEs are far more stable than small firms, providing higher quality sustainable employment over decades.
- MSE operations tend to be anchored in one specific location, and are often geographically clustered according to product groups.
- MSEs tend to be export oriented and to occupy specialized high-value niches in national and global supply and production chains.
- MSEs tend to be less oriented to growth in terms of size, and more oriented to growing profitability and market share.
- MSEs share many of the advantages of large firms in terms of management capabilities, market development, access to markets, procurement power etc.
- MSEs can also share many advantages associated with smaller firms, e.g. flexibility and rapid response to changing market conditions.
- MSEs tend to be heavily invested in technology, but not necessarily as R&D performers.

Characteristics like these indicate that MSEs are likely a critical factor in economic development and growth at national and international levels, but that they play especially important roles in the economies of the regions where they are located.

#### **4. Approach and Method**

This study employed a qualitative in-depth case study approach based upon interviews with a selected group of Alberta MSEs. Research of this kind is generally considered to be appropriate in instances where the goal is to develop an in-depth description of the fundamental characteristics of a social, economic or industrial environment from the perspective of key participants (Yin 1989). This approach is especially valid for this study as one of the key objectives was to discover more about the relationship between the MSE segment and government policies for industrial development and diversification.

Based in accepted phenomenologically-based methods as a commonly used in qualitative assessments of organizational and firm-level environments (c.f. Bruyn 1970 a & b; Bucciarelli 1988; Eisenhardt 1989), an in-depth interview method was employed. This involves basically an

open ended interview approach in which respondents are encouraged to describe their working environments and relationships from their own point of view. Phenomenological theory predicts that respondents will prioritize their knowledge of these environments in their responses.

An interview guide was developed as a vehicle for keeping interview within in the context of the study and to assist in organizing and assessing the resulting rich data set. The basic analytical method was to search out patterns in the responses and to relate them to a series of questions and issues as agreed with the sponsor. Again in accordance with theory and accepted practice, the goal of the researchers is to establish “closure” – the point at which most responses regarding these questions are observed to become similar or identical. These instances form the basis of the reported findings.

Companies were selected for interview according to a set of criteria established from the existing literature on MSEs. The criteria and selection procedures are described below in ANNEX 1. They were contacted by letter, fax or telephone, and the interviews were conducted according to the Canadian Tri-Council ethics and practices guidelines. Formal documented permission for the interview was obtained from each respondent. As per the terms set out in the permission to interview document, the identities of the companies and interviewees have been kept anonymous. A list of the companies interviewed, listed according to industry classification to maintain anonymity, is in the Appendix.

## **5. Findings**

The findings of the study are presented below, arrayed according to the five basic questions posed above (Section 1.4). Each section contains a summary description of key points of closure – where the majority of respondents expressed a reasonable degree of consensus or concurrence. This has been supplemented with discussion of notable exceptions where appropriate, and with anonymized quotations from some of the interviews to give a flavor of the kinds of commentary contained in the interviews.

### **5.1 What are the origin, governance and growth characteristics of MSEs in Alberta?**

#### **5.1.1 *Origins***

The origin stories of Alberta MSEs vary widely, but most would fall into the category of “founder” firms, some with family ownership and involvement. Most were started up by individuals and groups of stakeholders, who typically still participate in or retain financial and governance stakes in these firms.

The motivations for starting these enterprises were diverse, ranging from necessity-driven enterprise creation, to franchise-based origins, to science-led commercialization ventures. A significant factor for many origin stories was the need to respond to changing market conditions, especially with respect to energy industry slumps. As one founder stated:

*“Back in 1987, there was absolutely no work in Alberta. The reason we started the business was out of sheer necessity, just to put food on the table. We never envisioned our company to where it is today. With that said, in business, when you start to thrive, you see that it is more of a purpose and a passion to go beyond putting food on the table for yourself, to providing for others to put food on their table.”*

The origins of most of the companies interviewed had strong roots in specific technological and/or professional competencies. A typical origin route was for company founders to have gained experience in a larger organization before spotting an opportunity to stride out on their own. In some cases, this occurred as a response to downsizing and outsourcing strategies in larger enterprises, but in others it was pure entrepreneurship – spotting an opportunity to develop a new venture around a specific competency or gap in the market. A few other firms interviewed had origins in smaller family operated ventures, or in professional partnerships that attained their present sizes organically as they grew markets for their product or service offerings.

Given the structure of the Alberta economy, many of the participating MSEs either originated in the resource sector, particularly oil and gas, or otherwise linked their origins and evolution to this sector. But many others, particularly in areas like software development or financial services, were oriented to a more diverse client base with no immediately obvious reasons to have emerged in Alberta over any other region. A few of the firms we interviewed were structurally tied to the management or operational support of Provincial or regional civil and commercial networks, systems and infrastructures as would be found in any comparable Canadian or international jurisdiction.

### **5.1.2 Governance**

The companies interviewed displayed quite a wide range of governance. Only a handful were publicly traded. Most often, the form of governance reflected the historical origins of the company. A typical structure is for the original founders to retain shares in the business and to sit on the company board. This was noted to have advantages in terms of stability and maintaining knowledge of the company among the decision makers, but also disadvantages, for example in making prospective capital investments or exploring new markets. A few of the companies interviewed operated in regulated sectors, most notably in financial services, meaning that their governance structure and to some extent their export and growth potential was governed by regulatory authorities.

Other than for the few publicly listed companies, the financial structures of the MSEs interviewed tended to be rather straightforward. MSEs are stable businesses, profitable, with good growth prospects. As such, they are prime candidates for standard banking instruments like loans and lines of credit. One CEO noted that without ATB they would have gone bankrupt in the 2008 recession. One healthcare company noted that banks would lend to them at less than the prime rate because their business was so stable. Some companies were entirely self-

financing, growing by investing retained earnings, with no external capital at all. We also found several innovative schemes where suppliers provided financing. Venture capital was not identified by respondents as a significant financial model, with most regarding the VC model as irrelevant or inappropriate for their particular companies.

A number of companies were employee owned. This is discussed more fully in section 5.2.5 below.

We were able to interview only one Indigenous owned business, but we noted many characteristics in common with the other companies we interviewed. They decided to locate off reserve to be closer to their customers and occupy an environmentally friendly LEED-certified building. They found it relatively easy to raise money from traditional banks and the band. In common with many other companies we interviewed they had challenges hiring staff to do the type of service work they provided. In terms of governance, the company was community owned and was answerable to the Chief and Council.

**5.1.3 Growth**

It was clear from the interviews that defining MSEs in terms of numbers of employees yielded a flawed picture of their industrial and economic characteristics and growth trajectories. Almost all the firms interviewed indicated that although their permanent employee base was reasonably stable, their *worker* base (people working for the company in several capacities at any given time) was more flexible and fluid – in a few extreme cases varying as much as 100% or more. This is explained by the extensive use of contractors, certainly in sectors that can involve seasonal work or fluctuating project acquisition and size, but also, increasingly because of the virtual nature of much work. One interviewed company with about 200 permanent employees also reported sustaining about 1400 contractors, some of whom had worked for them for many years. Other companies in the software sector outsourced significant amounts of work internationally, because in the virtual space, high-quality work can often be obtained internationally at a fraction of the cost.

Approaches and attitudes to growth were found to vary widely, as were aspirations and capabilities for growth. Several firms indicated that the original goal was to grow into large publicly-traded companies as quickly as possible. We encountered a few cases where a firm initially succeeded, or came close, only to revert to MSE dimensions. Declines in the economy generally after 2009 were the most cited reasons, along with uncertainties in key regional markets, mostly energy. A summary of the main growth patterns we observed is given in Table 3.

**Table 3: Summary of Observed Growth Patterns**

Growth pattern	Business areas
Started in Alberta and grew across Canada	General commercial contractor; Printer; Banking Consultants; Recruitment agency; Commercial contractor; Software engineering company; Real estate investor

Started in Alberta and expanded to sales in the US or UK	software to automotive dealers; insurance broker ; Custom circuit boards ( 40% of sales in US)
Growth by marketing globally	IT Services (to oil and gas industry) - 26 countries; Geoscience services- 80% of sales international; Wireless IoT (90%+ of sales internationally); Engineering company (but no sales in the US)
Growth focused in Alberta	Industrial contracting; Electrical design/build; Airport; Medical imaging; Recruitment agency; Gas Producer; Architect.

However, growth within these patterns is replete with nuance which is indicative of many special business characteristics that arguably are conditioned by the nature of the MSE as a business entry.

A number of MSEs experienced ‘unanticipated’ growth and did not aspire to grow further in terms of employees. As one CEO put it:

*“I don’t want to get much bigger or to have 200-300 people, because that’s not us. We want to be the kind of company where people have confidence in their employment and where we can train people.”*

But this view was by no means universal. We also encountered forceful views to the contrary:

*“... never believe an entrepreneur who tells you that his goal was not to become a Fortune 500 company.”*

Most saw a clear tradeoff between high growth and survival, and regarded aiming for high growth, as such, to be a risky strategy with respect to the productive allocation of resources and the preservation of the firm. As one CEO explained:

*“The choice is always between using scarce capital to grow for the sake of growing, or to use it to upgrade the product and the workforce. Mostly we have decided on the latter.”*

Only a handful of the MSEs interviewed were actively pursuing conventional growth goals. However, one of them provided an interesting insight into how MSEs might approach this goal from a specific perspective linked to their origins as MSEs:

*“I expect that we will be achieving one billion in revenues annually and be one of the top contractors in Canada, so we won’t be an SME. We want to build an organization for the future and for a future workforce and not build on models of the past. The current billion dollar companies in the sector in Canada are built on a model of the past. Instead of being a collection of district silos reporting to a head office, we’re betting that it will change; related to changes in technology and workforce and on allocating resources to their highest and best use nationally, rather than simply locally.”*

Consistent with some of the observations noted in more detail below as to the competitive niches exploited by MSEs, most interviewees indicated that growth was linked to the nature of the product or service and to the unique value proposition pertaining to players in this niche. Often this involved specialist knowledge of or long-term relationships with a specific client base. Several comments were noted also that growth beyond a certain level would inevitably mean becoming subsumed into a different kind of enterprise which would separate the founders and employees from the business.

In terms of how most MSEs achieved their current sizes within the patterns noted in Table 3, a few consistent paths were observed. Growth by merger and acquisition was a frequent strategy, particularly when expanding into other regions of Canada or internationally. The firms acquired in these cases were typically of the same or smaller size, and often they were former contractors. Some of these acquisitions acted as venues for entering foreign markets or as sales outlets.

However, the main observed path to growth, and, also to reduction, was the state of growth in key markets in any given period. Most firms interviewed grew in response to demand. Unlike small firms, however, MSEs show much higher tendencies to evolve rather than cease trading if market conditions change. Several respondents noted that their HQP and capital resources, which were assembled originally to address a specific market or niche, had been re-purposed and re-oriented as conditions in the original market segment changed or deteriorated. In some cases, this meant spilling-over knowledge and skills gained in one type of business to entirely new types of business.

To sum up, some interviewees were clearly highly entrepreneurial and viewed the mission of all entrepreneurs to grow their businesses to the largest size possible. For them, the MSE was indeed a stage that they would like to transcend. Overall, however, we encountered a highly complex set of attitudes to growth and how to achieve it. Many respondents displayed clear sentiments echoing “socioemotional” factors as described above. These included strong attachments to the community, and to the workforce, but also to their personal roles in running the company. For example, we found widespread support for local community assets such as Arts groups, community organizations and charities. These activities are largely instigated by the principals in these enterprises, many of whom are active in these organizations. The public relations visibility of such outreach is arguably much less for smaller firms than for large “branded” ones, indicating that such ventures were instigated out of genuine community commitment. But it was noted also that such activities created a company culture which made it easier to attract and retain good employees.

## **5.2 How do MSEs sustain themselves in the industrial ecosystem?**

Responses relevant to this question cover a wide array of factors ranging from business strategies and models, to structural positioning in various markets. As noted above, many MSEs are dependent upon contract networks involving smaller suppliers. Thus, they sit at the center

of contracting hubs that likely are essential for the survival of many small firms. On the other hand, the client base of many of the MSEs interviewed also included, or in a few cases was primarily oriented to much larger firms, including MNCs. In this space, they provided many, often specialized products and services that filled key niches in much larger supply chains. MSEs also often compete for business with much larger firms who also maintain divisions that also are competent in these niches. A few firms even described competing with their own larger clients, against the possibility that providing the services in question might also at some point be assumed by those clients internally.

### **5.2.1 Coordination and cooperation**

In terms of the role of MSEs in the formation and operation of industrial clusters, it must first be noted that none of the firms interviewed perceived or defined themselves as being part of such constructions. Never did a firm come forward with the actual term “cluster” in describing its relationships with customers, suppliers or supply chains. Moreover, the location of markets for these firms is not fixed and often fluid. Some MSEs identified significant local competitors or collaborators, others did not. Consistent with what has been learned in other jurisdictions, MSEs can be understood best in the context of their structural positions in various local, national and global supply chains and in terms of their long-term relationships with clients and customers, rather than as part of identifiable, much less formally organized industrial clusters. And although the interviews indicated that some Alberta MSEs are, in effect, key players in such constructions, they are not generally in positions to establish them, or shape their evolution.

Linkages with universities and generally with the national or Provincial research systems were noted generally to be low as concerns the conventional technology commercialization paradigm, and many noted greater involvement with SAIT and NAIT and some of the colleges than with universities. This was consistent with observations below to the effect that MSEs tend to be innovative, but not R&D intensive as conventionally defined. In all we encountered very pragmatic attitudes to links with the research and education system, as encapsulated in the following observation for one of the CEOs. It also illustrates the disconnect between the practical needs of MSEs and the priorities of the research and education system.

*“We require a lot of specialized technical skills that aren’t part of post-secondary curriculum. The level of equipment or systems specific knowledge that is required to be successful in our line of business it goes quite far beyond the training and education that anybody can get getting an engineering degree at University that we’ve experienced or any tech school we’ve experienced. So, what that means is; there is absolutely a skilled—an ongoing skill development investment and requirement and how successful we are as a business is in large part determined with how effective we are at developing that. Over the past three years when times have been lean we had to curtail a lot of that kind of skill development investment and we know that that’s a problem that we need to address and we’re taking steps to address that now. Maintaining developing and maintaining*

*skills—specialized skills on specialized equipment—that’s our product development.”*

### 5.2.2 Competitive strategies

A general picture of the types of competitive strategies that we noted from the interviews is presented in Table 4, arrayed according to the business areas of the interviewed firms. This indicates not only the wide range of strategies employed, but also that many MSEs use multiple strategies. Certainly the most characteristic element of competitive strategy for most MSEs interviewed was orientation to market niches, notwithstanding that many of them competed with much larger national and multinational players in these same niches. The advantages exploited by the MSEs in these markets ranged widely. In some way, most exploited specialist knowledge or industrial capabilities that would be more expensive for larger firms to keep on tap. Many MSEs were noted to collaborate with larger firms, and to incorporate the product and service offerings of larger firms into their own product and service portfolios – whether as distributors or re-sellers, or as integrated into their own production systems.

**Table 4: Summary of selected firms by source of competitive advantage**

Source of advantage	Business areas of interviewed firms
Technical expertise and employee skill	Industrial contractor; Supplier of pumps and air compressors; Architect; Custom circuit boards; Recruitment agency; Wireless Internet; Engineering; Natural Gas producer; Banking consultants.
Superior customer service and relationships.	Industrial contractor; IT services; Automotive dealer software; Printer; Engineering; Custom circuit board manufacturer
Unique or differentiated product or service (specific sources of advantage indicated in parentheses)	Pump and compressor manufacturer (early technology adopter); Medical imaging; Automotive dealer software; Geoscience services (blockchain); Insurance broker (app); Software and engineering consultants; Engineering company (software).
Unique or differentiated business model (specific sources of advantage indicated in parentheses)	IT services (continued customer contact); Automotive dealer software (long term contracts); Recruitment agency (targeted consulting teams); Architect (collaboration with specialized companies in US); Real estate investor (extensive use of technology); Truck manufacturer (focus on the north- AB and Territories); Engineering company (archive to retain knowledge); Commercial contractor (integrative software); Electrical contractor (enforcing uniform standards)
Lower costs	Wireless Internet of Things (undercutting US defense contractors); Engineering company (exploiting exchange rate differentials)
Regulated businesses	Airport; Medical imaging; Banking consultants.
Economies of scale	Software to automotive dealers; Engineering company; Truck manufacturer; Electrical contractor; Commercial contractor.
Company culture	Engineering software consultant (looking after employees); Architects (training staff); Electrical contractor (career development); Commercial contractor (personal and professional development); Real estate investor (career development, community support; Gas producer (stakeholder focus)

The company culture element in particular was a defining feature for many firms. This concerned both relations with customers and relations within the firm. A flavor of the attitudes we encountered that have direct bearing on competitive strategy are illustrated in the following observations from one of the CEOs:

*“We’re trying to add value every chance we get. So, when they come back with things like; you’re reliable, you’re resilient, you’re a great organization to work with, and we have extremely high customer satisfaction ratings in the 90% range. But that’s part of it is—we take that very seriously. Most of the people who start here have to start with customer care. It doesn’t matter what we’re training them for; learn all the products, talk to the customers, go out into the field, watch installations, know where these guys are at in minus forty degrees when they’re trying to make something work. Sit out there with them once and you’ll make sure it works the first time.”*

Company culture was noted also to be an element is dealing with crisis given the human capital intensity of most of the firms interviewed amidst the frequent volatility of the Alberta economy. As one CEO recounted:

*“We’ve seen massive growth and we made money and then we started to put some policies and stuff in place but our culture changed and all of a sudden, we’re seeing problems—we’re on the verge of bankruptcy. And I was like, the only thing that changed was our people didn’t feel like we cared about them and if we didn’t—if they don’t feel like we care about them, our client doesn’t feel like we care about them.”*

### **5.2.3 Exports**

The export picture for Alberta MSEs was found to be highly mixed. Only a few had mainly an export orientation, and for some, exports proved to be a critical factor in establishing the company. For example, one firm reported that in its first eight years it had no sales at all in Canada. Nevertheless, regardless of their export profile, most of the firms interviewed were highly reliant on local and regional sales. Table 5 illustrates the rough distribution of export status as indicated in the interviews along with some of the destinations for these exports.

**Table 5: Export status summary of interviewed MSEs**

Status	Industry category
Never export	Airport; Medical imaging; Executive Search; Truck manufacturer; Insurance broker; Printer; Real estate investor; Consultants to financial institutions in Canada; Architects
Minor exporter	Electrical/instrument contractor; Software and Engineering Consultants.
Major exporter (30%+ of sales)	Oil and gas services (export to 26 countries); oil and gas production (~100% in US); Automotive dealer software (30% US); Geomatics Consultants (70-80%); Engineered Pumps and Compressors (export all over the world); Wireless Internet of Things (~90% in 50 countries); Custom manufacturer of circuit Boards (40% in US); Industrial automation (US only); Engineering Procurement Construction Management company (Australia, India, US)

A fraction of the companies we interviewed never export and likely never will, at least within their current business models, whether because of the structure of their industry and/or because of the very local nature of the business. However, at least half of the companies we interviewed are significant exporters, having more than 30% of their sales outside Canada. Again, this is often because of the structure of their industry, where the Canadian market is not big enough to absorb what they are capable of producing.

#### **5.2.4 Innovation**

Strikingly, virtually none of the MSEs interviewed considered themselves to be R&D intensive. A few went so far as to stress that even though they were technologically sophisticated, the risks associated with the “research” part of R&D were simply too great to be absorbed by a modestly scaled enterprise. The “development” part, on the other hand, was not only more manageable but often essential. Generally, most of the MSEs interviewed who operated in technology markets noted that for MSEs, margins are much thinner and capital risks much higher. This is consistent with strengths observed in most of these firms to assess, acquire and deploy new technology in very innovative ways, driven on the one hand by the need to carefully manage capital costs, while on the other by the need to stay competitive. In many cases, it is not the technology as such that makes these firms competitive, but rather their high level of expertise in configuring and applying technology, combined with lower cost structures.

Very low incidences were reported of collaborations with university researchers or other scientific institutions involving the commercialization of new technology. That said, many of the firms interviewed described their technology-related activities in ways that otherwise conform to every accepted definition of innovation. It would not be off the mark to conclude that most of the MSEs in our sample were exceptionally active innovators, but not R&D performers as such.

In terms of the evolution of the industrial ecosystem in Alberta, and given the clear dominance of the resource sector in the origin stories of the MSEs interviewed, an interesting mix of

opinions and attitudes was noted regarding the future of these industries amidst environmental concerns. Among companies that were primarily or solely oriented to resources, most were of the view that the regulatory environment, and especially the inefficiencies in its application, were holding up potentially billions of dollars in investment. However, other firms in the same sectors advocated leveraging opportunities presented by concerns about the environment. For example, one firm in the oil and gas sector noted that its role was to satisfy several different stakeholders, which included not only shareholders, but also the environment: monitoring their performance on wildlife, water usage and greenhouse gas emission concerns was clearly now a significant part of their corporate culture.

### **5.2.5 Survival and sustainability**

An important issue for MSEs, especially in a historically volatile economy like Alberta, is how to sustain themselves through recessionary periods, while at the same time growing their businesses. Interviewees noted many diverse strategies that have been successful to varying extents and at different time in make them more resilient in downturns, many of which indicate that there could be significant advantages to their size that could be leveraged to make them more resilient in a downturn:

The following is a summary of such strategies as described by interviewees:

**Long order lists:** MSEs with capacity for taking on multiple projects prior to a downturn are able to remain busy despite the absence of new projects coming online. Smaller enterprises are much more susceptible to running out of work earlier in a downturn. As one respondent recalls:

*" In the most recent recession, we saw the downturn coming before it actually occurred in 2014. But we had many projects 'on the books' – which kept us busy through 2015 and 2016."*

**Customer loyalty:** For some MSEs, the ability to retain loyal customers during a downturn highlights the benefits of a customer-centric strategy. As one respondent stated:

*"[We] are very customer-centric and constantly custom-making and custom-delivering customer needs...where there'll be a need that is identified and we'll say, okay, give us a few weeks. Then, we'll go to work to develop a whole new process or a whole new piece of equipment in order to address that. We play in the space where there's not a lot of competitors, because it's hard for competitors to address customer concerns like we can. So, when we hit the down cycles, because we have such a great reputation...we're able to survive them."*

**Tendering for more public projects:** The contraction of private sector projects during recessionary periods may stimulate MSEs to bid for more public sector projects, which can carry them through an economic downturn. One respondent noted:

*“By 2017, when there was no more spin-off projects from the oil industry, we had to find different ways to grow the company. So, we started to get involved with Alberta Infrastructure, which involved designing new schools and other public buildings in the province. This has helped us to stay busy in the last year or so. We’ve had to pivot from every downturn into a new opportunity.”*

**Leveraging new capabilities to service higher value customers:** MSEs that can generate new work during recessionary periods expand their knowledge and capabilities; allowing them to bid for larger projects, grow and build reputation. In some cases, this also allows them to diversify by shifting their business to service higher value markets in the same locale, as suggested by one respondent:

*“A key contributor to our growth was bidding for and securing a large project in Edmonton, which took us into a different market. We ended up receiving a Bronze Award from the Government of Alberta, and that helped us pivot the business towards larger and more complex projects. The recognition that we could compete with larger players in the market built our reputation and drew us into a market that we hadn’t been in before; from the residential market to the commercial market, which is where we wanted to be.”*

**Employee ownership:** A number of MSEs in the study have an employee ownership structure; adopted in response to their good employees being recruited by competitors or adopted to attract and retain new talent and to stimulate a growth orientation to the business. As one respondent recalls:

*“2005-06 was another pivotal time for the company, because the economy had started to pick up and we had some of our employees being targeted by our competitors. Hence, in 2006, we offered shares to 7 people in the company, and this didn’t only allow us to retain these people but also allowed us to grow. So, we would not be where we are today without that.”*

**Geographical expansion:** For some MSEs, geographical expansion may not only overcome growth limitations in the Alberta market but also position the company for significant growth during recessionary periods. As one respondent stated:

*“The big thing is that the industry is going to demand an economy of scale...now, because of the internet and new entrants into the business, especially out of the U.S. and eastern Canada, you’ve either got to grow or go home. If you look at our plans, we really want to cover the north...if we did that, we would be a pretty big player. And the economy of scale impacts everything*

*from fluids, like oil and everything else, the costing, to your parts supplied and what you can do in bulk parts. And you can drive your costs down. The ultimate goal is to get us out of Alberta.”*

**Differentiated service offerings:** MSEs seek out new ways to differentiate themselves from competitors, particularly in sectors characterized by price competition. In some cases, adopting new business processes have been driven by the need to diversify during a downturn. As suggested by one respondent:

*“...when the oil crashed, we got involved in another type of construction, which is the integrated project delivery (IPD) method. IPD involves getting the experts in the room to discuss the building project, with open risk and reward, which requires everyone on the project to really know what they’re doing. We are involved through our design build expertise, but you really need to know who you are partnering and working with. You have to trust people, be very honest but also be vulnerable. “*

In other cases, significant investment in the adoption of new business methods has allowed MSEs to expand national and become market leaders, as described below.

*“... [We] operate in a ‘price-taking’ industry, but we do have some things that are unique about us. One would be that we’re a Canadian leader in IPD, which is a methodology that we invested in bringing into Canada. It has taken off, and this provides us with a ‘ticket’ to enter into other markets. When we adopted it, we invested heavily, because we had to train an industry and create a lot of awareness and stimulate the market. Today, the IPD market in Canada is pushing \$2 billion and [we] have the largest market share. The IPD market is more than we can handle, so we’ve had to start joint-venturing with other contractors in other markets to pursue new IPD projects.”*

**New Technology Markets:** MSEs pursue opportunistic strategies which include technology adoption and entry into new markets. Some MSEs are leveraging government grants supporting new technology adoption, as suggested by one respondent when discussing their entry into the solar market:

*Although we will do residential with solar, it’s a small market, and we’re looking for more commercial projects We are doing some work on aboriginal reserves and we also did a project in Calgary, which is really unusual because it is not our area. Why did we get the project? Because we had the people, expertise and the infrastructure to do that job, and many of the solar companies are one-two person shops. The solar market is quite big, because of the government grants...it really is about understanding the return-on-investment and the board or advisory group really needs to understand the payoff for the project, and with the grants right now, it does make sense.*

### 5.3 What unique contributions do MSEs make to the Alberta economy?

The MSE segment is in many ways the stable bedrock of the Alberta economy. MSEs are significant providers of essential products, services and expertise to large companies. They also play an important role for the welfare of small companies as customers, as coordinators of various market sub-segments, and as conduits between the small and large firm segments.

One CEO aptly summed up a sentiment shared in various ways by most interviewees as to the particular position and importance of MSEs as enablers in the Alberta industrial ecosystem:

*“ ... allow us to be able to do the things we need to do to consistently grow this business. You know—we’re [Alberta] 8 billion in GDP. We [MSEs] don’t generate it all. In fact, we generate not a lot of it but all of our partners are generating it and we are the pivotal part of that ecosystem. We’re a key enabler. And it’s important when you’re in a role like this to understand exactly where you fit in the ecosystem.”*

Some of the unique contributions provided by MSEs are related to the unique capabilities they had developed in response to the needs of specific industries in this region. This was especially apparent in the resource sector, which has spawned many MSE spinoffs from larger Majors and Minors. Their position in the market is secured if they can provide specialized products and services on more advantageous terms than can larger firms. The expertise and local knowledge embedded in many of these firms likely facilitates new investment by larger entities by providing a stable local base of high quality services and industrial capabilities.

Across the spectrum of MSEs interviewed, probably the single most common and noteworthy contribution of MSEs relates to human capital development and deployment. For many years, it has been noted that mentorship and training functions in LEs have been severely eroded as typically they pursue shorter and shorter term objectives. SEs likewise face challenges in developing human capital in that their long-term horizons are typically limited. In contrast, the MSEs interviewed are predominantly long term players with deep roots in the Province. They show high commitment to the welfare of the region in which they operate, and make long term investments in their employees. Many have close relationships with universities and techs aimed at recruiting and integrating HQP. Only a handful of MSEs interviewed employed mainly lower-skilled workers (at or slightly above minimum wage). Most had generally high HQP to wage-labor ratios. Thus, indications are that they play a key strategic role in the development and retention of Human Capital in Alberta.

Aside from qualifications and pay issues, and related to the strong commitment of many of these enterprises to their communities, the work environments described by interviewees indicate strongly that employment in Alberta’s MSEs is generally of higher quality than employment in smaller firms and even in larger firms. Sometimes this was evident in reports of simple courtesies, like paying taxi fares home for staff working late. But many of the companies we interviewed were proud to have earned places on provincial or national “Best places to

work” lists. Often, generous employee reward schemes were reported, as were proactive employee training, advancement and retention schemes. Several firms described how they went to great lengths not to lay employees off in economic downturns, extending in some cases to re-purposing both employee skills and capital investments to develop new business areas.

Referring back to the widespread use of contractors, the study identifies a strong ‘leveraging’ effect of MSEs regarding employment, which acknowledges that head-count intensity is different for different sectors. For example, one MSE reported that it supplies only 10% of employment directly for their projects, with 90% of employment going to sub-contractors. Table 6 summarizes our estimates of the leveraging effects of a few of the companies interviewed that supplied leverage estimates to us, identified by industry affiliation.

**Table 6: Indicative employment leverage estimation of MSEs interviewed**

Industry	Direct employment	Contractors/ jobs enabled	Multiplier
General contracting	~400	~4000 (Canada)	10
Architecture	~100	~1000 (Alberta)	10
Airports	~300	~24,000 (Alberta)	80
Recruitment services	~120	~350 (Canada)	0.4
Wireless Internet	~80	~100 (off-shore)	1.3
Engineering management	~170	~70 (off-shore)	0.4
Engineering and software consulting	~100	~40 (Alberta)	0.4
Gas production	~220	~1400 (Alberta)	6.4

NOTE: The multipliers indicate number of contractors divided by numbers of direct employees. In the case of the airport, total employees at airport businesses divided by airport staff.

#### **5.4 What induces MSEs to remain in Alberta, and what makes them susceptible to takeover and being moved out of the Province?**

Most of the firms interviewed indicated that even where they had expanded nationally or internationally, the bulk of their business remained centered in Alberta and Western Canada. As most of the MSEs interviewed were still being managed by their founders or founding partners, one of the reasons to remain in the Province related clearly to the personal preference of company principals. Many of those who operated nationwide or internationally identified no compelling reasons to move their head offices, but several did note advantages in establishing or maintaining specific competencies in regions other than Alberta. The increasing incidence of virtual working practices was cited as a key anchoring factor in some cases – i.e. it made no sense to move the company headquarters even though the work force might become highly diffused nationally or internationally.

As noted above, several Alberta MSEs both increased their size and expanded their market reach through the acquisition of similar firms in other regions. However, fewer of the firms interviewed expressed any pressing or potential need to move their head office. Rather than relocate, several MSEs interviewed had secured access to key foreign markets through alliances with foreign firms or by opening subsidiaries. Several firms indicated some of the structural problems that might be encountered in any attempt to move an MSE into a different jurisdiction – particularly a larger one. Some also noted that in many cases MSEs do not have the capability to move to other jurisdictions, in particular, the US – unless they are either bought out by larger firms who are already present in these jurisdictions, or they secure agreements and arrangements with established players to facilitate market access.

Nevertheless, certainly many of Alberta’s MSEs are susceptible to takeover and/or to relocation. In compiling the contact lists for this project, many were identified that already had become subsidiaries of multinationals. However, as far as could be determined, most of these companies continued to trade in the same segments, remained locally based, and stayed much the same size in terms of employment. However, most firms interviewed, consistently noted resistance to moving out of the region. Sometimes this was connected to concerns as to what might happen to the company if it transitioned from private or collective ownership to public ownership. It would be fair to say that none of the firms we interviewed expressed an immediate desire to move out of the Province.

While the majority of MSEs interviewed did not identify specific plans to relocate their business out of Alberta, some MSEs did. One manufacturing MSE identified some of the competitive advantages in relocating out of Alberta:

*Our manufacturing facility is completed transportable - what’s shocking is that we’re still here. Just look at the land values here, even at the end of a 3-year recession and look at the expense of having to build. If we become successful in marketing the product outside Alberta, and we get into this space, it would only make sense for us to put the plant down in [location withheld], to be honest with you. We’ve talked a lot about, like “Wouldn’t it make a lot of sense to go down there, try and get some tax concessions, and put these things right beside the factory?”*

Another identified the shift of their business activities outside of Alberta, which may see an eventual move of its head office, stating:

*“Our plan and model is to distribute leadership across the country. We still have the largest concentration of people in Edmonton, but proportionately, that is changing dramatically. The new President, who’s from Edmonton, will be relocating to Toronto next year. The decision-makers are there in Toronto, even when the projects may be here. To get these clients, we’ve had to become*

*national, and your mind-set changes. Now, we're in Canada, looking at different markets; one of which is Alberta."*

It is clear from our interviews that even though the overall attraction of remaining in Alberta is still strong, significant fissures are opening up in the "stay put" logic of many firms. As indicated above, many of the reasons pertain to evolution in markets and in national and global business conditions. But they also pertain in large measure to the role of government in this evolving landscape. The dilemma faced by many of the CEOs we interviewed is well captured in the following observation from one of the publicly listed MSEs:

*"One of the questions from shareholders is ... Why are you here? And my comment is, my heart belongs to Alberta but my mind belongs to the shareholders. Tell me where we're supposed to the tax difference of you know—mid thirties, to you know they were saying 21%. In Houston, well also in Texas if it is foreign profit coming in it's at 14%. So, that's all our Canadian profit would come into the US at 14% compared to thirty-six in Canada. Our shareholders wouldn't mind that. And I think part of the problem is; either the governments understand it and just stay quiet on it or they don't understand. But it's almost known—there is no flee of brains there is no flee of capital, everybody—everything's bright and rosy. I've seen too many CEO's are moving to California no they're in Germany now, they're in England now, they're not here. And it isn't just their personal wealth that they took out on average the employed three, four, five hundred people. And these are friends. This isn't me doing a study. These are just people I know. If you had government saying, we've got to create a new environment, let's stop that, I'll put my shoulder behind it and say, let me help. So, yeah that one is frightening. My heart belongs to Alberta only goes so far. Our roots are here but at a certain point it's compelling, it's so compelling."*

### **5.5 Do MSEs have different needs from government than small and large firms?**

The answer to this question is in some ways the most straightforward and in others the least straightforward. As governments chronically fail to set MSEs apart from the broader SME designation, few, if indeed any current programs, whether at Federal or Provincial levels are explicitly oriented to MSEs. As one CEO noted:

*"... there are no programs for "\$50 million companies" in this Province."*

or, to paraphrase another CEO:

*"... we found out about this [government] program through a third party ... the government itself does not seem to be aware of us..."*

The overall view, however, tended to focus on the issue that what may be a net gain for large or small firms in using government programs, could often be nothing but an added risk or source of new costs for MSEs.

To paraphrase perhaps the most common response from interviewees:

*“Governments consider us either to be large small firms or small large firms.”*

or as put explicitly by one CEO:

*“We are too big to be small but too small to be big.”*

Thus, programs aimed at LEs or SEs turn out mostly either to be unavailable to MSEs, or available on often disadvantageous terms. For example, some interviewees pointed to instances where forms of support that were available as grants or subsidies to LEs and SEs were available to MSEs only as loans.

In general, it would be fair to say that most of the comments regarding government related less to specific programs, subsidies and so forth, but to what are perceived as failures of general governance and lack of effective coordination at Federal and Provincial levels. Many interviewees cited examples where key investments were being held up by government inaction or delays in regulatory approvals.

This was especially the case with infrastructure projects in the energy sector. One CEO claimed that in his sector, related to resource extraction generally, not just energy, literally billions of dollars in both foreign and domestic investment were in lined up, waiting for regulatory decisions. Or another CEO expressed it:

*“Canada is a place where everything is on hold.”*

Accordingly, respondents were more likely to refer to the stimulant or retardant effects of the overall governance climate than of any one program. Although no business likes uncertainty, this clearly presents special problems for MSEs in that typically they have much larger investments and workforces to protect than do SEs, but many fewer options than LEs for riding out protracted downturns.

In terms of government funded technology-oriented programs – e.g. R&D subsidies or other development and procurement incentives – the experience of most firms ranged generally from neutral to negative. Much in the responses was of course dependent upon the different relationships and attitudes noted above to undertaking R&D in the first place. This range was most evident regarding fiscal measures. A few were found this program to be relevant and beneficial, one even reporting that 100% of its costs were SR&ED eligible, but most of the firms interviewed described it as risky, unhelpful or irrelevant, even though many of them reported filing regular SR&ED returns, or were considering using the program. On the other hand,

experiences with NRC-IRAP were generally regarded as positive. This program seemed to have more scope to be relevant to how MSEs do business, although one company noted that they were too large for IRAP. HQP development programs were cited as being particularly relevant for many MSEs because of their strong profile in developing human capital. Some of the firms interviewed had positive experiences with such programs.

Rather few firms reported experiences with the Provincial clutch of innovation and economic development agencies – Alberta Innovates, Innovate Calgary, or other similar bodies. Again, this may reflect that these organizations tend to have a strong start-up R&D orientation, which is not how many MSEs describe their relationship with new technology, even if by most definitions, they are engaged in R&D or R&D-like activities. The issue for many MSEs is not so much the potential relevance of these institutions, but rather that they do not appear to have MSEs in their sights as contributing or client stakeholders. Almost all government programs aimed at industrial development, innovation and diversification were aimed at small start-ups, and mainly with a research based technology orientation.

The interviews indicated many ‘enablers’ and ‘constraints’ to doing business in Alberta which highlight different perceptions on the possible role of government in addressing some of the challenges faced by MSEs.

Certainly a key enabler is government investment in incentives to develop and stimulate new technology, but, as suggested by one respondent, this is a precarious environment for sustain a business in the longer term, particularly an MSE:

*“We are happy that the Alberta government is investing in renewable energy, because that will keep us afloat. I’m fearful that a new government might pull the grants to renewable energy and if this happens, then our return on investment (ROI) isn’t going to work. People don’t realize that Alberta is the 6<sup>th</sup> best place in the world for solar, but the least amount of solar used, so we need the government to support grants for renewable energy, especially as the oil industry begins to decline. We need to pivot into the next thing, and I think that the solar energy opportunity in Alberta is huge, and we need to start banking on that.”*

Public-private Partnerships are another enabler. We found evidence of a potentially strong economic leveraging effect in the form of public-private partnerships (PPPs). We could identify three elements of a successful PPP involving MSEs: 1) stabilizing the core business of the public partner; 2) committing private sector partners to a long-term view on return on investment (ROI); and 3) generating deal flow. These interrelated elements are highlighted in a comment from one MSE, which is worth reporting in full:

*“Then, when we looked and said, if ... [name of facility suppressed] are supposed to be used as economic development tools, now that we stabilized the core business,*

*what is our economic strategic differentiator here in Edmonton that we can use for our region to drive business? And for us, it was two-fold. One was our proximity to the oil sands, so recognizing that Edmonton was going to be the staging centre for labour and logistics, so how do we ensure that we develop the right business model and supports for that. And then, the other piece was that we have the largest land of any other airport in Canada, so how could we use our land – and land developments – to further drive [our business] and economic value. So those were really the two shifts – stabilization, infrastructure, air service and then the business drivers being the oil and gas drivers and our real estate.”*

*The challenge for us, at the leadership, board and community levels, was to make those millions of dollars in investment, knowing that we weren’t going to get a return on investment in year one, or year three. There isn’t the impatience of quarterly share returns but we have performance metrics and growth targets we need to meet. It’s just over a different time frame.*

*We see our role as business development overall, as we are a big economic driver. We also do deals. You can do a power point of all Edmonton’s attributes and the region’s attributes, and it’s a nice positioning piece. But, unless you have a piece of paper that says “here’s a real business opportunity and you can invest in this now, and here’s how you’re going to do it, and the development permits will be delivered here...”*

The relationship with government can also be a source of constraints, in particular regarding regulations. For some MSEs, Provincial regulations were identified as an especially significant barrier. As one respondent from the services sector states:

*“I’m very disappointed with the new standards legislation that prevents an individual from working more than 44 hours in a week. The legislation is not conducive to the nature of these jobs or the reality of the short construction season in Alberta. I need to train new people, rather than get those that are already trained and know the job to work those extra few hours. So, these employment standards have very much hindered productivity, job satisfaction and will cut people’s earnings by approximately 10% this year, to be shown on their T4s. I’m very upset about that.”*

A respondent from the manufacturing sector voices different concerns:

*“In terms of the environment and safety regulations in Alberta. If you look at our manufacturing, we’re having to do pressure welds where nobody else in North America has to do pressure welds. Well, pressure welding costs a lot more money or the amount of safety levels that are not shared in any other jurisdictions that our workers need to have. You know, the taxation, you can go on and on; it’s at every level.”*

A number of MSEs voiced concerns over lack of prompt payment legislation and the risk of cash flow problems. One respondent noted:

*“One of the challenges in our business is doing jobs where the owner may run out of money while we are completing the work. We end up carrying hundreds of thousands of dollars, if not close to a million dollars, but the smaller companies, which don’t have overdrafts, etc. just can’t afford to do this. And even some very large players went down this year. So, I would suggest that when a job is rewarded, the money is placed in trust, and these are the ways that the money will be released, e.g. inspections, progress draws, etc.”*

Another concern relates to the lack of tangible outcomes from engagement with government. One respondent states:

*“There are not a lot of really great stories to be told, in this industry in particular, via any type of engagement that can generate a deliverable or is sustainable. Guys walk in here and they don’t do any research. Just the 101 of sales is look up the guys on the website and find out about them. Google some names. Instead of walking in and doing the handshakes, and then leaving and nothing gets done, you can have something to put on the table and start a relationship. When dealing with government, the feedback is all on our side as far as when to engage next.”*

Our findings suggest that MSEs in general are ‘less needy’ than small firms in requiring public assistance and financial support but ‘less influential’ than large firms in attracting the attention of policy makers. Most MSEs in our study are going concern businesses with sufficient market power and reputation to overcome many of the short-term pressures and managerial crises facing smaller firms.

MSEs can leverage particular advantages with their size and scale of business activities that make them more resilient in economic downturns compared to small firms, yet are flexible and agile enough to adopt different strategies that enable them to grow during recessionary periods, compared to large firms.

At the same time, MSEs appear to be significantly affected by changing regulatory requirements that erode their profitability and drive further costs into their business, and the businesses of their customers. For a number of MSEs in our study, this is raising serious consideration for relocating their businesses to other jurisdictions.

Overall, however, the principal issue at the present moment is that government simply does not identify the MSE as part of a distinct sector with potentially distinct challenges, some of which could be mitigated with both targeted and general policies. What is sure is that neither SE-targeted policies or LE-targeted policies reflect the world in which most MSEs do business.

One of the CEOs described the potential consequences very well – to paraphrase: *“we are doing all kinds of things that could be aggregated or scaled up to transform the economy of the Province, but the government appears to be unaware of any of them”*.

## **6. General observations**

To put the above findings in broader context, it is instructive to compare the experience of Alberta’s MSEs with those noted in existing studies of comparable firms in Europe. At the end of Section 3 (above) we summarized eight characteristics derived from some of these studies. And in most respects, Alberta’s MSE sector was found to be similar. For example we noted the strong commitment to workers, the niche strategies, the high human-capital to wage-labor ratio, the first adopter tendency, the technological sophistication, the worker and client-oriented corporate culture, the ongoing pragmatic innovation strategies, and the long-term outlook. Most definitely we observed a corporate environment that was oriented strongly not just to conventional business goals but to “socio-emotional” wealth tied in to the long-term general welfare of not just the company, but of the founders, the employees and the community.

Our interviewees also confirmed many of the same challenges – in particular regarding skills development and retention, productivity and sustainability. But there were also many strong indications of challenges that are unique to the economic structure of Canada and Alberta. Very different from the situation in Germany, for example, whose economy is not only highly diversified, but in such a way that German firms are major or even dominant actors in a wide array of global industries, the Canadian domestic and export economy is heavily skewed to just two industries – Automobiles and Resources, principally energy – both highly volatile. Even though we participate successfully in many other industries – Canada’s economy is highly diversified – we have minor global footprints in most of these other sectors, particularly in high value-added sectors.

As MSEs have a strong high-value niche orientation, inevitably this means that the range of niches available to Canadian MSEs is much narrower than in many competitor jurisdictions. Thus it is not surprising that we found ample evidence that the fortunes of many MSEs in Alberta are tied very closely to the energy and other resource industries. These industries play important roles in both the origin stories of many Alberta MSEs, but also in their evolution and sustainability. Probably the feature that impressed us most was the ability of all of the MSEs we encountered to formulate nimble strategies to at least preserve themselves during resource market downturns, but in some cases to learn to thrive in derivative, adjacent or even entirely new markets.

This particular observed ability may be indicative of the comparative advantages that MSEs may hold in specific markets over both smaller and larger enterprises. SEs, and particularly technology start-ups inevitably have short-term horizons. Few survive much less grow in size or revenue. They have few options when market conditions turn unfavorable and they tend to

disappear rather than evolve. LEs have many more options, but often these involve just being able to weather downturns through downsizing, asset redistribution etc., or just terminating operations in a specific jurisdiction.

The MSEs we interviewed were all in many ways survivors of many upward and downward swings. The key differential would appear to be that although they lack the size to adopt typical LE strategies – at least to the same extent – they have sufficient size to maintain themselves in core markets through an array of proactive and reactive measures, and even to leverage downturns as opportunities to evolve their product and service offerings, their human and material capital deployments and their business models. More importantly, many demonstrated an ability to build different futures around basically the same or similar ranges of professional competencies and skills.

It is also clear from our study that MSEs play an especially important role in stimulating growth through innovation. The unfortunate tendency for policy has been to look at innovation primarily from the R&D standpoint and in terms of linkages between the research system and industry. The MSE example illustrates that although this is a valid aspect of strategy, it ignores many of the most important ways in which innovation creates value in an economy. As Nelson & Winter (1982) pointed out decades ago, the real returns from innovation are long run returns through the adoption, application and imitation of new products, processes, organizational and market structures, among many other possible inputs. It is clear from our preliminary investigation here that MSEs play a key role here.

Virtually all of the firms we interviewed were active and persistent innovators by any officially accepted definition of innovation as an economic activity. In some cases this involved in-house development of new technologies. But in most cases it involved the creative configuration and combination of many factors or production, as required, in a practical applied context; exactly where the long-run returns from innovation can be shown to be generated. That they do this as embedded in complex supply chains involving both smaller and larger firms, places them in the position of structural conduits for innovation.

Throughout our sample, we see evidence that the principle missing piece that MSEs may provide for innovation and diversification strategies, may be in the particular abilities they display in the management of complex organizations and projects at modest scales. We uncovered many examples of business practices in MSEs that could potential be of benefit to smaller firms in establishing themselves as viable businesses, and even to large firms with respect to nimble management of divisions and subsidiaries, and in client relations.

Lastly, it soon became clear in the interviews that the MSE segment as a whole is the least formally connected to government or to public sector institutions, with the exception of regulatory bodies. From their own perspective at least, MSEs are not on the radar of industry development and diversification programs in government, whether at the Federal or Provincial level. But as noted above already, neither do they particularly seek greater involvement, except to the extent that they regard many potentially useful programs not to be constructed or

operated with the needs of MSEs in mind. And in particular regarding regulation, a constant refrain was that regulations generally are drafted and administered without consideration of the special costs and risks they may impose on firms who in many cases, despite their smaller size, must compete in the same markets with much larger enterprises, or must absorb relatively higher costs and risks as part of the supply chains for such firms.

## **7. Recommendations**

As this study is largely exploratory, examining a stratum of the Canadian industrial ecosystem that has been mostly invisible to policy makers to this point in time, we are reluctant to make recommendations of a normative nature. The central issue for the present would appear to be how to put the MSE segment and its role in industrial development and diversification on the radar of policy making bodies such that a more balanced approach to designing and delivering potentially beneficial policies and programs.

**Recommendation One:** Make it a matter of standard practice to separate MSEs from SEs when assessing the needs and impacts of Alberta companies. Most of the available data on SMEs can be disaggregated in this way to some extent. It is a question of conceptualization more than analysis.

**Recommendation Two:** Revise approaches to innovation and diversification in policy such that they do not regard MSEs as transitional entities – a stage on the way to larger size – but as a distinct entity with its own characteristics and challenges. This should involve establishing more active linkage between relevant government agencies and MSEs.

**Recommendation Three:** Undertake further study of the regulatory environment as it may pertain specifically to MSEs, with an eye to discovering any special negative consequences that are in need of mitigation to keep these companies competitive.

**Recommendation Four:** Create a knowledge-management forum in which the knowledge contained in Alberta MSEs regarding management, strategy and enterprise evolution can be collected and distributed, both within the MSE segment and with small firms that might be candidates to become MSEs. This forum could be connected with the Provincial business schools and with Alberta Innovates.

**Recommendation Five:** Perform an environmental scan of Federal and Provincial innovation and industrial development policies and programs to identify potential strategies for leveraging the specific needs and capabilities of MSEs into the Provincial industrial ecosystem.

**Recommendation Six:** Encourage universities and polytechnics to engage more specifically with MSEs, especially with regards to skills development and mentoring possibilities. This could involve funded programs to place more students in MSEs and better coordinate some of the initiatives already being undertaken by many MSEs themselves.

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## **ANNEX 1 – Selection criteria and procedure for the interview sample**

In consideration of the specificities of the MSE landscape in Alberta, the following target criteria were used to select candidate firms for Interview:

- They currently create wealth in Alberta.
- They currently have 100-499 employees. We may relax this threshold if we see a company that we judge to have a high growth potential who is just below this level.
- They occupy a clearly defined niche in the marketplace.
- They are established companies who have been in existence a significant time, 10 years or longer.
- They have a clearly defined competitive advantage to allow them to compete globally.

This approach specifically excluded firms meeting one or more of the following exclusion criteria:

- Non-commercial enterprises.
- Franchises.
- Branches of foreign owned multinationals.
- Retail and wholesale trade, unless we see a company with international sales.
- Utilities.
- Health and social assistance companies (unless they export).
- Accommodation and food services (unless they are innovative tourism companies).

We started by examining a large data base of around 1600 medium sized companies obtained from the S&P Capital IQ database.

First, we systematically removed companies that appeared to meet the exclusion categories listed above. After removing them, that left approximately 440 companies, or about 28% of the original list.

Second, we looked at the remaining companies and identified a shorter list that seemed to be useful for the project. This list contained about 100 companies.

Third, we researched each of these 100 companies to confirm that they met our criteria. This included confirming that they were still in business, were located in Alberta.

Finally, we approached the companies to ask if they were willing to be interviewed.

Schematic of target company selection.



**Companies interviewed**

<b>Industry classification</b>	<b>Locations</b>
Electrical/instrument contractor	Calgary, Grand Prairie
Oil and gas and services	Calgary, Louisiana, 26 countries
Airport	Calgary
Medical imaging	Calgary
Industrial automation	Calgary, Vancouver, US
Engineered pumps and compressors for industry	Calgary, Edmonton, Grande Prairie, Vancouver
Automotive dealer software	Calgary, Boston, Ottawa, North Bay, Dubuque Iowa, Toronto, Fort Worth Texas
Executive search	Calgary, Halifax, Ottawa, Toronto, Winnipeg, Saskatoon, Edmonton, Calgary and Vancouver
Geomatics consultants	Calgary
Architects	Calgary
Insurance Broker	Calgary, BC, Ontario, Egypt
Printer	Calgary, Toronto, Sarnia, Fort McMurray
Wireless Internet of things supplier	Calgary, Ukraine, UK, China.
Custom manufacturing, circuit boards	Calgary, US subsidiary
Engineering company	Calgary, Australia, India
Airport	Edmonton
Truck manufacturer	Edmonton, Grand Prairie, Campbell River, Prince Rupert, Prince George, Fort St. John, Fort Smith, Fort McMurray

Software and engineering consultants	Calgary, Toronto
Natural Gas Production	Calgary and Grand Prairie
Consultants to co-op banking sector	Calgary, Alberta, Saskatchewan, Manitoba
Real estate investors	Calgary, Edmonton, Halifax
Construction company	Edmonton, Toronto, Vancouver
Engineering company	Edmonton, Saskatoon
Nanotechnology company	Edmonton
Electrical Engineering company	Edmonton, Calgary
Aboriginal contractor	Fort McMurray