

Internationalization of Canadian high tech small and medium enterprises (HTSMEs):
Opportunities, Challenges, and Strategies

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Abstract

Canadian high-technology small and medium sized enterprises (HTSMEs) have significant opportunities when internationalizing, however need adequate strategies in place to overcome challenges. The industry is known for rapidly changing technology and knowledge, meaning windows of opportunity to seize market share are incredibly small (Spence, 2003). HTSMEs tend to internationalize more rapidly than SMEs in other sectors (Spence & Crick, 2005). It is important to analyze this topic because Canadian HTSME's have a wealth of opportunities to capture but must be aware of strategies to overcome challenges. Canadian HTSMEs are evaluated on their internationalization processes. Michael Porter's model of National Competitive Advantage is applied, showing Canadian HTSMEs have limited domestic demand and will often focus on global markets at the same time, or even before the domestic market (Spence, 2003). As well, Canada has a low export to import ratio for high-tech goods due to a lack of supportive and related industries. Yet, there are significant opportunities. Opportunities identified are the ability to internationalize faster, greater market share opportunities outside of Canada, and the commercialization of innovative ideas to the global market. Firms also face challenges including barriers to enter the international market, rapid learning and ever-changing standards of technology, funding challenges, high levels of competition, and high costs of internationalization. Strategies to overcome these include the transformation of the company structure, market entry strategies, networking and clustering, implementation of modern technologies, and increasing learning efficiency. Overall, Canadian HTSMEs can reap significant benefits from internationalization, however those can be realized only if Canadian HTSMEs try to use recommend strategies to mitigate challenges in the internationalization process.

Keywords: Internationalization; High-tech; Small and medium enterprise.

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1. Introduction

Internalization is continuously becoming an important factor for the competitiveness of enterprises, regardless of their size and area of interest. HTSMEs are small and medium-sized firms characterized with advanced knowledge and capabilities in technology, an educated workforce, and the ability to adapt quickly to fast changing environments (Crick & Spence, 2005). With travel becoming cheaper and faster and the internet becoming easier to access, firms in the high-tech market are internationalizing faster and earlier than ever before (Spence, 2003). Some researchers suggest that firm's fundamental reason for expanding their international activities is to increase their profitability and for survival (Smallbone & North, 1995). However, challenges have been identified in evaluating the performance of internationalizing firms. HTSMEs evolve in particularly fast-moving environments and emergent strategies should be initiated by taking advantage of windows of opportunity which may not stay open for long, as the technological life cycle is getting shorter, and there is more need to expand to a greater market share faster (Spence, 2003).

The purpose of this paper aims at gaining a deeper understanding of challenges faced by Canadian HTSMEs and business strategies that can be leveraged to realize opportunities on the path to internalization. The first objective of this paper is to identify business opportunities of Canadian HTSMEs on internalization. The second objective is to identify challenges faced during internalization. Thirdly, strategies to overcome challenges and reap opportunities will be suggested. The analysis also includes Michael Porter's Diamond model, applied to the Canadian HTSME industry. Finally, we will present a conclusion and implications based on our research and findings.

2. Opportunities of Hightech SMEs in Foreign Countries

2.1 Opportunity for New SMEs to Internationalize Faster

SMEs in the high-technology industry have a unique opportunity to internationalize faster due to the lack of a strong industry structure coupled with the lack of lengthy company history. This gives way for faster, more rapid internationalization for SMEs (Crick & Spence, 2005). Some note that a firm's internal knowledge is the most important factor to internationalize, but it is also important to remember that external initial conditions can also contribute to the success of the firm (Spanos, & Lioukas, 2001).

Strategies for internationalization of high-tech SMEs differs greatly from low-tech SMEs or large corporations. "Firms operating in high-tech markets have found that they tend to internationalise more rapidly and follow market entry routes that are different to those operating in low-tech markets" (Crick & Spence, 2005, p. 168). For this reason, having a recent change in leadership, or being a fairly new firm aids in creating strategies that are adaptable to the constantly changing environment of the high-tech industry. Pednekar (2015) notes that SMEs operating in the high-tech industry must have the flexibility to restructure to be successful. The individualistic culture in Canada aids in encouraging entrepreneurship, and results in many new and innovative firms with an entrepreneurial spirit.

From a resource-based perspective, the cumulative knowledge a firm has, its history, and its experiences matter and can be a determinant for success in internationalization (Saarenketo, Puumalainen, Kuivalainen, & Kylaheiko, 2004). Crick and Spence (2005) also iterate that from a resource-based perspective, entrepreneurial learning is a key criterion and gives rise to the opportunity for SMEs to internationalize faster. As "high tech firms are basically knowledge-based industry with its main focus on research and development" (Pednekar, 2015, p.186) the organization must have superior knowledge as a core competency. All these points considered, a HTSME will have a greater opportunity to internationalize faster, and possibly gaining a first mover's advantage while doing so.

2.2 Opportunity for Greater Market Share Outside of Canada

In most instances, the reasoning for HTSMEs to choose to internationalize is the greater opportunity in foreign markets than in the Canadian market (Spence, 2003). Knight (2001) also notes that SMEs focusing on global niche markets is one of the predominant characteristics of an SME. As a result of a fairly limited demand domestically, high tech SMEs should focus internationally from the beginning, in order to achieve successful internationalization (Litvak, 1990). That being said, one study found that some Canadian HTSMEs were reluctant to internationalize outside of North America because of differences in culture, and especially difference in language (Crick & Spence, 2005). For that reason, the greatest opportunity abroad may lie first and foremost in the United States where culture is similar to Canada, and secondly across the Atlantic. Simply comparing the dollar amount of high technology exports in 2016 between Canada (23.974 billion USD) and the United States (153.187 billion USD) in Figure 2 shows very clearly that there is a much greater market for HTSMEs in the United States than in Canada (World Bank, n.d.). This represents a considerable opportunity for high-technology SMEs to take advantage of.

2.3 Opportunity for Commercialization of Innovative Ideas to Global Market

A firm's fundamental reason for expanding their international activities is to increase their profitability and by the same token their propensity for survival (Smallbone & North, 1995). HTSMEs possess breakthrough knowledge and are in the process of developing cutting edge technologies. HTSMEs that produce and sell products for which domestic demand is limited or nonexistent, international orientation is crucial for its survival and long-term growth (Fryges, 2009). Businesses like this are characterized by a business model in which internationalization plays a key role and they tend to face challenges for their survival with their limited resources. Globalization and increasing competition force these smaller companies to search for new ways to survive. HTSMEs should create international business competencies from inception to avoid path dependence on domestic competencies that could stifle international performance (McDougall, Shane, & Oviatt, 1994).

The daily activities of an HTSME is usually not an easy process, as application of knowledge and technology in the marketplace must be discovered, then adopted through research and development (European Commission, 2001). However, being that funding is a major challenge for HTSMEs, there are usually limited resources to execute the innovative breakthrough ideas they have (Park, 2005). Therefore, an opportunity would be the commercialization of these ideas to high tech giants both domestically and globally, through the form of prototypes and models (Park, 2005). In this way, HTSMEs can transform their technological ideas into solutions for industry, government, or customers. Survival of HTSMEs is based on how well they can exploit their innovative strategies and failing to do so gives room for the growth of competitors (Park, 2005).

High tech firms must have an established market penetration strategy to reach a wider market and gain more market share and they may face limited opportunities for that in their domestic market (Fryges, 2009). Although the process of globalization attracts different types of challenges such as market entry, Canadian HTSMEs may face less challenges commercializing their innovative ideas to markets in the United State due to shared culture, language, and borders compared to other attractive global markets like Japan and European countries. However, a market research is important to determine the most attractive markets available for Canadian HTSME.

Research has shown that the initial internationalization of HTSMEs may not follow a systematic and linear pattern, but rather a more complex path created by, among other things, opportunities that present themselves in existing networks and serendipitous encounters, reiterating (Crick & Jones, 2000) findings. The commercialization of innovative could also result in strategic alliance that would speed up the internationalization process (Dana, Etemad, & Wright, 1999; Jones, 1999).

3. Challenges of Internationalization of HTSMEs

3.1 Barrier to Enter International Market

Internationalization can be explained as a process of involving more countries in performing the business activity (Yener, Dođruođlu & Ergun, 2014) where the MNE is located and operating in two or more countries. Global expansion can be a challenge as the external competitiveness from the international market has an influence on the success of the market expansion beyond domestic

borders. This can be felt from the natural rivals who are already in that market or can be also from firm's own network (Pedersen, 2000).

Every individual company has its own form of challenges which may be dependent on the situation. This is also fueled by a combination of factors relating to societal, cultural, industrial and organizational factors (Saarenketo et al., 2004). Informal distance is known as the cultural and the ideology difference between two countries (Schwens, Eiche & Kabset, 2000), so difference needs to be reduced before entering the new markets. Considering formal distance, constraints from insufficiently developed institutions in the host country may result in firms facing significant restriction on environmental responsibilities and strict government rules and regulations (Schwens, Eiche & Kabset, 2000).

Host countries might also vary with switching costs. This is due to an early investment in high-tech products and services, and hence the uncertainty grows as the level of technology changes (Gliga & Evers, 2010). As an example, in China people are attracted to Xiaomi whereas in North America, Apple has the major share of the market (Counterpoint, 2018).

3.2 Ever-changing Standard of Technology and Rapid Learning

High technology is constantly evolving with many different types of services and products. For example, the software business can be divided into packaged software, enterprise solutions, and professional services related to software (Hoch, Roeding, Purkert, Lindner, Muller, et al., 2000). In many cases, Canadian HTSMEs don't have time to successfully incorporate their cumulative past experiences and knowledge to develop strategies before moving forward (Spence, 2003).

In today's highly competitive global business arena, it is important that the sustainability of a firm's competitive advantage will be contingent on its innovative capacity (Pyka, 2002; Sveiby, 2001). Research has shown that high-technology small firms struggle to remain innovative and competitive while trying to grow and be responsive to the changing environment (Pednekar, 2015). Change of technology is rapid, and the environment of the high-tech sector is dynamic. However, attributing various challenges such as constraints on resources, technology becomes critical for SMEs, especially for firms operating in high-tech areas (Pednekar, 2015). With technological innovation the preminent question has been with the nature of technology itself. According to

Dewar and Dutton (1986) “[technological innovation can be defined as technical change or the adoption of new processes and technology” (Dewar & Dutton, 1986). Firms that understand the significance of information on new technology and that are quick in importing, assimilating, and applying it have an advantage at being innovative (Cohen & Levinthal, 1990). Attempts to observe technology surveillance has posed a challenge for high-tech small firms is to remain innovative and competitive as they grow (Daim, Rueda, Martin, Gerdtsri et al., 2006).

SMEs in the high-tech industry face the challenge of rapid learning. It isn’t enough that SMEs learn from their own activities. By doing this, they may miss the extremely small window of opportunity to achieve first-mover advantage and gain customers before their competitors do (Saarenketo, Puumalainen, Kuivalainen & Kyläheikoet, 2004). Crick and Spence (2005) note that HTSMEs must react rapidly and assess opportunities rapidly in order to take advantage of them.

3.3 Funding

It is necessary to note that the funding constraints for SMEs are not generally a problem for all firms. Studies have shown that most SMEs are not uniform over the number of inhabitants in these organizations and they demonstrate that over the years most SMEs have managed to obtain the finance they need, although a significant minority of firms have issues accessing finance (Vos, Yeh, Carter, & Tagg, 2007; Cowling, Weixi, & Ledger, 2012). Nonetheless, the greater part of research shows that it is growing SMEs which struggle to access credit (Canton, Grilo, Monteagudo, & van der Zwan, 2013). There seems to be mounting proof that quickly developing SMEs face a unique set of funding challenges (Lee, 2011).

HTSMEs are combination of high risk and high yield, notably when they are in there start up and seeding period, considering this is a stage when funding is urgently needed. However, they have no profits and defined timeline to get them financing from traditional sources, such as banks (Liu, 2016). During the process of development, HTSMEs can face uncertainty risk, products’ immaturity, and changes in the national industrial policy. HTSMEs find it harder to pull in investments as their activities are delegated as high risk. High interests in long-term research are combined with the vulnerability of profits, as many new ventures flop in the commercialization

procedure (Beard & Easingwood, 1996) and item life cycles are getting shorter (Song & Montoya-Weiss, 2001). In addition, at first HTSMEs only engage in niche portions of the market and are often challenged with the management of long payback periods (Olleros, 1986).

Factors like this make HTSMEs unattractive to possible investors, who obviously would like to see progress such as revenue generation to support the business. Moreover, investors face difficulties trying to assess the commercial viability of projects due to the knowledge gap between the inventor with a technology background and a possible investor who lacks the technological expertise required to fully comprehend an innovation's potential (Lehtimäki, Simula, & Salo, 2009).

3.4 High Level of Competition from Larger and Global Firms

HTSMEs are often characterized as a state of a hyper competition, which is because of frequent market disruptions caused by innovations (D'Aveni, 1994). There are often uncertainties about competitions, especially industry outsiders, competitors' market strategies and the competitors' product offerings (Mohr, Sengupta & Slater, 2010). Each MNE would utilize its own locally situated competitive edge and facilitate related intra-firm activities crosswise over national limits through the interior mechanism. Nonetheless, MNEs are extending their regional and functional realm by securing or accessing, new assets and capacities. The basic component of key resource looking for FDI, rather than market-chasing FDI (Acs & Preston, 1997), is that partaking firms perceive that their independent assets and abilities are insufficient to continue their worldwide aggressiveness and they need to draw upon assets and capacities of others to accomplish its own goals and targets (Acs & Preston, 1997).

3.5 High Cost of Internationalization Process

The European Commission's European Network for SME Research (ENSR) review directed in 2003 distinguished the most regularly referred to hindrance by SMEs as the incredible expense of the internationalization procedure (European Commission, 2004). Such expenses include those related with market investigation abroad, buying legitimate counseling administrations,

interpretation of archives, adjustment of items to outside business sectors, and travel costs, notwithstanding the higher business and budgetary hazard brought about (Wilson, 2006).

Contractor (2007) defines such expenses in three stages named as Early Internationalization, Later Internationalization, and Excessive Internationalization. In stage one, Early Internationalization, a firm experiences liability of foreignness as far as their newness to the alien market's organizations and probable favoritism against outside organizations (Contractor, 2007). In stage two, Later Internationalization, for each extra operation or market included, there would continue to be learning, coordination, territorial adjustment, and authenticity obtainment costs. With economies of scale, the cost starts dropping. In the third stage, Excessive Internationalization, expanding to more markets raises administrative expenses, data burden, and “global coordination costs increase by more than a linear relationship to the degree of internationalization (DOI) or number of nations” (Contractor, 2007, p.459).

There are additional expenses incurred when learning about another country and their culture. SMEs are less inclined to have the capacity to appropriately deal with the technology transfer process when issues happen (Acs & Preston, 1997). Regarding the expenses of transfer of technology, Acs & Preston propose that SMEs may confront higher transaction costs than the substantial MNEs. Although SMEs, because of their relative size, benefit from diminished bureaucratic costs, they also have fewer assets to dedicate to seek, negotiate, monitor and authorize endeavors. They may be subject to opportunistic behavior with respect to providers and purchasers because of their small size (Acs & Preston, 1997).

3.6 Intellectual Property Rights (IPR)

As HTSMEs are in a knowledge-based industry, naturally they are “concerned with the protection of their intellectual property, especially regarding core assets” (Mohiuddin, 2018, p.24). In one study it was found that more sophisticated technologies will outsource to markets in countries that have a stronger IPR policy and enforcement (Naghavi, Spies, & Toubal, 2015). In addition, some high-tech firms in the biotechnology industry in Canada will see more success if they “win the patent race in a particular technology area” (Delerue, 2018).

As an individualistic country, the Government of Canada encourages protection of intellectual property rights, and has entire websites dedicated to helping entrepreneurs through the process of applying (“Understand the basics: Intellectual assets,” 2016). Therefore, the challenge is not Canadian firms obtaining intellectual property rights in Canada, but rather the race to obtain such rights before other companies and the ability to retain such rights when internationalizing.

4. Strategies of hightech SMEs in International Markets

HTSMEs develop in fast moving environments and emerging strategies can be initiated by taking advantage of opportunities that may not remain open for long. For internationalization, opportunistic strategies bring greater value than systematic ones.

4.1 Transformation of a Company’s Structure

A basis for SME’s internationalization strategy- to develop their own distinctive competencies that gives them competitive advantage and enable them to compete against other firms, regardless of their size. Born-global firms are those which enter international markets from inception, instead of after pursuing domestic markets first. These firms should consider a strategic shift with appropriate structural changes by establishing targets and addressing the culture differences before entering foreign markets. This will help in accelerating international expansion as well as increase in marketing activities (Spence, 2003). On the other hand, born-again global firms are those which exists as domestic firms before rapidly internationalizing. Internalization of these born-again SMEs can reproduce the strategy that was successful domestically. As a result of the competitive advantage gained from learning how to deal with specialized vertical markets and the perceived similarity of doing business in another country, they will see success in internationalizing (Spence, 2003). A firm needs to be flexible in the policies and procedures implemented in an international operation to ensure employees are engaged and executing on the company’s plans. Therefore, company’s need to develop policies, procedures and handbooks that comply with local requirements while maintaining the balance with overall company policies.

Sometimes SMEs fail because of lack of market knowledge. Therefore, a company can make use of its existing knowledge and competencies to pursue opportunities in a variety of foreign

environments. Another strategy to overcome the disadvantage of laggards is that SMEs can fall back on specialist foreign labour and can acquire specialist resources to upgrade and comply with their foreign buyers' requirements (Humphrey, 2002).

4.2 Market Entry Strategy

When entering foreign markets with a challenging institutional context, SMEs can best hedge their strategically important international activities through market entries that are non-equity based which includes direct exporting, cooperative export, licensing and contract manufacturing. Hence, the mode of market entry for HTSMEs to foreign markets could be either exclusively exporting overseas through agents or undertaking exporting with a combination of other expansion strategies (Crick & Jones, 2000). This helps in maintaining flexibility and dynamic behaviour (Schwens, Eiche, & Kabst, 2011). Nowadays, internationalization is identified as a function of several factors that lead to expansion strategies other than the exporting route for HTSMEs.

4.3 Clustering & Networking

Clustering means Canadian HTSMEs should locate themselves in close proximity with competitors in order to take advantage of knowledge spillovers, especially in the early stages of the industrial lifecycle. HTSMEs can also be known as knowledge intensive SMEs (Auito et al., 2000), and there is research that describes the various impact networks have on the internalization of HTSME without really focusing on the role networks play in the success of HTSME internationalization (Prashantham, 2006; Zhou et al., 2007). There are three specific types of networks that may influence the internationalization of an HTSME. They are personal, business or transactional, and informational (Julien et al., 2004).

Networking allows SMEs, especially those operating in technology-intensive environments, to share limited resources and develop new and unique resources by entering synergetic relationships (Spence, 2004). These firms must proactively establish relationships with foreign partners or buyers to mitigate their liabilities and mobilize network resources to create new capabilities that can contribute to their competitive advantage and ultimately their success abroad (Kenny & Fahy, 2011).

4.4 Implementation of Modern Technologies

For HTSMEs to increase their competitiveness in global markets involves application and adoption of new technologies that effectively serve to reduce costs. Technological advances provide the

possibility of mass-customizations, which can offer both the economies of scale and the richness of customized products for meeting customer needs. By implementing modern technologies, Canadian HTSMEs can gain access to information infrastructure that only large enterprises normally have access to. This increases a company's capability to communicate internally and externally. Improved communications with recipients, suppliers, and business partners can add value to products and services, which is in the age of information is even more essential, allows trade of concepts and intellectual property. It increases efficiency of company activities like promotion of products, creation of new selling channels, reduction of costs, decrease in distribution time, and simplification and improvement of customer service (Łabedowicz, 2013).

4.5 Increasing Learning Efficiency

Organizational learning plays a central role in the internationalization process. Learning is essential to the firm's performance and survival. High-tech small firms struggle to remain innovative and competitive while trying to grow and be responsive to the changing environment. With technology, change is rapid, and the environment is dynamic. However, challenges such as constraints on resources means that technology is critical for HTSMEs (Pednekar, 2015). There are various ways an HTSME can combat the challenges of rapid learning.

The first way to combat the challenge of rapid learning is learning through networking, which allows firms gain access to new knowledge bases created by other firms through partnerships and network relationships without precisely having to go through all their experiences (Saarenketo et al., 2004). Another way is learning through grafting, where firms can acquire another firm to access its knowledge base, resources, and capabilities, or it can recruit most competent managers with idiosyncratic tacit knowledge that the acquiring firm is lacking (Segelod, 2001). Next, firms can leverage learning through imitating. This is where SMEs observe how other successful firms enter international markets and try to imitate their behavior in order to achieve the same success. Lastly, learning through searching is where firms can proactively search for new information about the foreign markets (Saarenketo et al., 2004).

In the fast-evolving business environment of high-technology, there is a danger that all learning is seen as a good thing. It must be noted that “learning can be as much a core rigidity as a core competence” (Cassells, 1999). Firms must be able to unlearn and discover entirely new ways of conducting business in order to remain competitive and successful (Saarenketo et al., 2004).

5. Conclusion

This paper focused on the internationalization process of Canadian HTSMEs. Possible opportunities that lay ahead for Canadian HTSMEs were identified and include the need to internationalize faster to gain competitive advantage, along with acquiring more market shares from foreign markets. Additionally, for survival and profitability in the future it would be ideal to commercialize breakthrough ideas to other high-tech firms domestically and internationally. Nonetheless, the HTSME industry can be complicated and full of risks. Canadian HTSMEs can expect to encounter challenges such as barriers to entry, rapid learning and continuous change of technology, lack of funding, competition from larger and global firms, and the high cost of the internationalization process.

To remain successful and competitive, proposed strategies for Canadian HTSMEs include transformation of the company’s structure, market entry strategies, implementation of modern technologies, networking and clustering, and increasing learning efficiency. However, it is important for HTSMEs to be knowledgeable about the choices they make, and risks associated with the process of internationalization. Therefore, Canadian HTSMEs must take advantage of their resources to increase flexibility as well as innovation and be competitive as they grow. The ability of HTSMEs to monitor and keep current with changing technology standards is crucial. We grant a limitation faced when preparing this paper was the lack of scholarly articles written specifically about Canadian HTSMEs. Overall, Canadian HTSMEs can reap significant benefits from internationalization, however those can be realized only if Canadian HTSMEs try to use recommend strategies to mitigate challenges in the internationalization process.

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Appendix A

Porter's Diamond

Firm Strategy and Rivalry

Firm techniques, structure and rivalry will catch the robustness of domestic competition. Whether an industry is very competitive locally will impact the expansion in productivity expected to contend globally (Barragan, 2005). Businesses based in Canada need to develop competitive abilities to survive the rivalry from other global businesses. They cannot solely rely on domestic resources (Yener, Dođruođlu & Ergun, 2014).

Demand Conditions

Canadian HTSMEs have a very limited domestic demand and therefore will often focus on global markets at the same time, or even before entering the domestic market (Spence, 2003). Under the National Competitive Advantage model, “[n]ations gain competitive advantage in industries where the home demand gives their companies a clearer or earlier picture of emerging buyer needs” (Porter, 1990, p. 79). Canadian HTSMEs do not have strong domestic demand conditions pressuring them to innovate faster.

Related and Supporting Industries

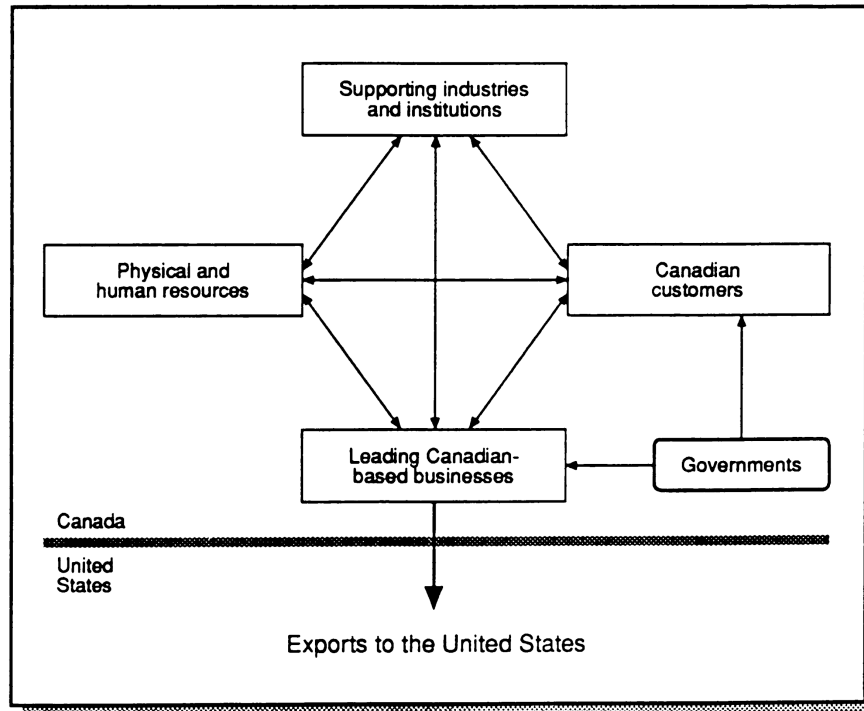
In the Competitive Advantage of Nations, the importance of related and supporting industries is highlighted to understand how firms can gain competitive advantage (Porter, 1990). Proximity arising from the co-location of companies, customers, suppliers, and other institutions amplifies the pressures to innovate and upgrade, and may serve as a form of support, providing access to information and incentive for performance measurement (Porter, 1998). In a study of Canadian businesses, Canada's efforts and success in technological innovation in the high-tech industry have been under criticism (Knight, 1996). According to Barrows (1992), compared with other developed nations in the world, Canada has one of the lowest exports to import ratios for high-tech goods (below 1.0) due to lack of supportive and related industries.

Canada lags behind other industrialized countries in obtaining patents, and in its ability to commercialize available technology (Rugman & D'Cruz, 1993). Canada has not invested in, created, or adopted the most advanced technologies, leading to one of the lowest increases in productivity growth of the G7 countries in recent years (Bommer & Jalajas, 1996). In a study of large high-tech companies, Bommer and Jalajas (1996) found a significantly higher rate of organizational encouragement for US R&D professionals to pursue technical development than their Canadian counterparts.

Factor Input Conditions

Factor conditions are the elements of creation and foundation important to compete in a specific industry (Porter, 1990). They incorporate the work aptitudes and characteristic assets that in beginning periods of advancement can give a favorable position. Porter (1998) recognizes the difference between basic and advanced factors. The principal factors are identified with natural resources, low priced labor, and geographic area. The secondary factors are created by the nation, for example, a base of specialists in regard to skills, high-tech infrastructure, innovative work in establishments and colleges (Barragan, 2005). As indicated by Porter's model, utilization of the Canadian physical and human resources has been excessively inward looking, content to depend on the degree and quality of the factor endowment as the base for wealth creation (Yener, Dođruođlu, & Ergun, 2014).

Figure 1. Porter's Home Country Diamond says treat the United States as an Export Market



Source: Adapted from Porter (1990).

Figure 1. Porter's Home Country Diamond. From "The 'double diamond' model of international competitiveness: The Canadian experience" by Rugman, A., & D'Cruz, J., 1993, *Management International Review (MIR)*, 33(2), 17-39. Retrieved from <https://ezproxy.tru.ca/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=6735882&site=eds-live>

The above figure illustrates the application of Porter's concepts. Figure 1 has Porter's four diamond components, with Canadian governments affecting these components as an overlay, although the major impact is on customers and leading firms (Rugman & D'Cruz, 1993). In addition, the Canada-U.S. border is shown to illustrate that over 70 percent of Canada's exports go to the United States. Hence, it has been the practice in Canada to view the U.S. market as a set of export opportunities to provide the base for developing large-scale industrial businesses in Canada. These businesses have been largely designed to exploit the base of natural resources found in Canada (Rugman & D'Cruz, 1993).