

Assessing the Attractiveness of CentrePort Canada- A Canadian Inland Port from
Manufacturers' Perspective

by

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Abstract

The continuous growth of international trade and development of containerization bring about the emergence and development of inland ports- inland sites performing seaport functions that do not require waterways (also called dry ports). However, so far inland/dry port research has paid very limited attention to Canadian inland ports. CentrePort Canada, located in Winnipeg where manufacturing is the largest industry, is the first Canadian inland port with three transportation modes and foreign trade zone status and is endeavoring to attract more businesses especially in manufacturing. This thesis thus aims to investigate whether CentrePort Canada, especially the North part, is an attractive site for manufacturers to locate their businesses. Attractiveness is measured by matching CentrePort Canada features with the location factors considered by specific manufacturers. Eight case studies involving in-depth interviews are conducted to explore manufacturers' perspectives on site selection factors and CentrePort Canada (North). Three groups of manufacturers are included: established companies located in CentrePort Canada South, new companies located in CentrePort Canada North, and established firms located elsewhere in Winnipeg. This thesis concludes that CentrePort Canada North is so far attractive to Winnipeg-based companies having plans to relocate within the city and outside manufacturers distributing to new markets. Winnipeg-based companies more appreciate CentrePort Canada-related features including available land, low land cost, and CentrePort Canada Way, while outside manufacturers are more interested in regional features such as low business costs, taxes and incentives, market access, and ease of transportation. For attracting new manufacturing operations, governments need to provide more manufacturing-related incentives and the inland port should improve its

services and promote more actively to the outside manufacturing industry. This study not only adds to Canadian inland port research, but also supports the adaptation of a relational approach integrating behavioral and structural location theories in addressing a site attractiveness evaluation.

Keywords: Inland port, CentrePort Canada, Attractiveness, Manufacturing

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Chapter One: Introduction

According to WTO International Trade Statistics (2015), world trade experienced unprecedented development from the late 1990s to the early 2000s. Although the 2008 financial crisis led to a sharp decrease in trade flows, global trade is recovering moderately (WTO International Trade Statistics, 2015). In addition, since their invention in 1956, containers have led to a revolutionary transformation in the shipping industry in the 1960s and 1970s. They have been used on a large scale and have become a major transport unit, especially in multimodal transport, thus achieving a breakthrough in international trade (Dadvar, Ganji, & Tanzifi, 2011; Poulsen, 2007). At the end of 2014, world container port throughput reached 171 million 20-foot equivalent units (TEUs) (UNCTAD/RMT/2015). The continuous growth of international trade and development of containerization have prompted the emergence and development of inland ports. Inland ports are inland sites performing seaport functions that do not require waterways (also called dry ports), aiming to “facilitate and process international trade through strategic investment in multi-modal transportation assets and by promoting value-added services as goods move through the supply chain” (Center for Transportation Research, The University of Texas, extracted from CentrePort Canada Business Plan, 2011b, p. 5).

Past inland port research discusses definitions of inland or dry ports proposed by different organizations and scholars (e.g. Jaržemskis & Vasiliauskas, 2007; Leitner & Harrison, 2001; Roso & Lumsden, 2009; UNCTAD, 1991; Woxenius, Roso, & Lumsden, 2004), inland port classifications, functions, features, location selection, and different levels of development in different countries including Europe (Woxenius et al., 2004), the U.S.

(Walter & Poist, 2004), China (Zeng, Maloni, Paul, & Yang, 2013), and India (Ng & Cetin, 2012), etc. However, contrary to Europe and the U.S., where inland ports have been developed for a long time (Beresford, Pettit, Xu, & Williams, 2012; Walter & Poist, 2004; Wilmsmeier, Monios, & Lambert, 2011), in Canada they have only recently been established. Therefore, there are limited contributions to Canadian inland port research (e.g. Adelman, 2015; Ng, Velasco-Acosta, & Wang, 2015; Rodrigue & Van Horne Institute, 2012).

However, several papers have been published on CentrePort Canada. Larson and Morris (2009) describe features of Winnipeg, Manitoba as an inland port location and discuss the possible role of an inland port at the *push-pull boundary*. In this concept, inventory is “pushed” or forward deployed to a strategic location based on the economics of large-scale production and transportation. Later, the inventory is “pulled” further down the supply chain based on customer demand. More recently, Larson and Adelman (2016) report the results of a survey on features of CentrePort Canada, along with potential links between these features and *lean logistics*. The lean approach attempts to eliminate forms of waste in the logistics process, such as excess inventory and waiting time. The researchers found that logisticians and supply chain managers in Winnipeg are aware of the inland port’s location and that an expensive new road (CentrePort Canada Way) runs through it. On the other hand, local area professionals are largely unaware of CPC’s additional promoted features.

Using the planning and construction of CentrePort Canada Way (CCW) as an example, Ng et al. (2015) investigate the dynamics between institutions and governance of transport infrastructure projects. They found that the CCW project was driven institutionally and politically to a large extent, rather than by any potential for regional economic impact. The

project changed the approach to planning and construction of large transport infrastructure projects in Manitoba. Interestingly, the institutions involved generated process changes in both positive and negative ways.

So far, there are four inland ports in Western Canada, namely, CentrePort Canada in Winnipeg, Global Transportation Hub in Regina, Calgary Region Inland Port, and Port Alberta in Edmonton. They are all created to promote local economies and attract new businesses, however, little success has been made. Due to scant literature about inland port attractiveness in the Canadian context, it is worthwhile to study this topic and figure out why they have not achieved the desired outcomes. This study concentrates on CentrePort Canada—the first and largest Canadian inland port to have three transportation modes and foreign trade zone status (CentrePort Canada Annual Report, 2013). Its footprint consists of two parts: the almost established South area and the developing North area (CentrePort Canada Annual Report, 2016a, see Appendix A). The inland port is located in Winnipeg, where manufacturing is the largest industry (Economic Development Winnipeg, Winnipeg: Overview of key sectors), and is making great efforts to attract private investment. It is promoted as an ideal place for manufacturing development (CentrePort Canada, Industry Sectors).

Therefore, the thesis attempts to evaluate the attractiveness of CentrePort Canada, especially CentrePort Canada North, based on local manufacturers' perspectives.

Attractiveness is defined as “the possession of qualities or features that arouse interest” according to the Oxford Dictionary

(<https://en.oxforddictionaries.com/definition/us/attractiveness>). In this study, attractiveness

refers to the features that CentrePort Canada (North) has to arouse manufacturing companies' interests to locate their businesses in the inland port. As a result, this study addresses the following primary research question: can CentrePort Canada, especially CentrePort Canada North, arouse manufacturing companies to locate their businesses there? Witlox's (2000) model is adopted in this study to measure the attractiveness of CentrePort Canada (North) to manufacturing companies by matching CentrePort Canada features with the location requirements proposed by manufacturers. For a better understanding, secondary research questions are developed as: 1) what location factors are considered by manufacturing companies? 2) Do CentrePort Canada features match the location factors that manufacturing firms put into account? Both secondary research questions are addressed by eight case studies involving interviews and secondary data. CentrePort Canada features are derived from the CentrePort Canada website and its published documents.

The remaining chapters of this study are organized as follows. Chapter 2 reviews past literature on inland port concept and industrial location theories, along with Witlox's (2000) framework adopted in this thesis. Chapter 3 describes the methodology—a multiple case study approach with rationale and design details. Chapter 4 introduces the background of CentrePort Canada and presents the factors in examining CentrePort Canada's attractiveness. Chapter 5 discusses the within-case and cross-case results of eight case studies. Finally, conclusions, contributions, limitations, and implications for future study can be found in Chapter 6.

Chapter Two: Literature Review & Theoretical Background

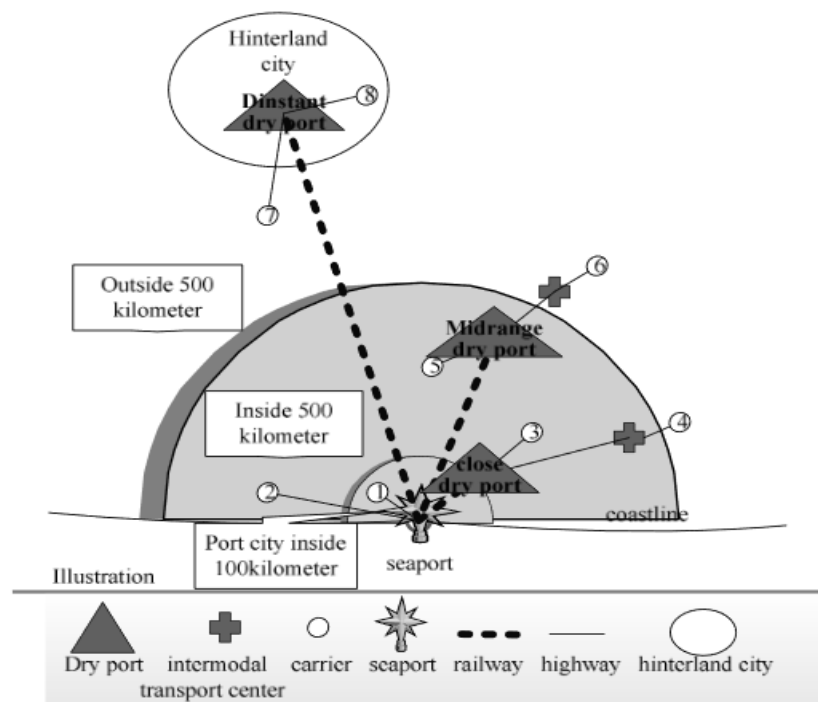
2.1 Inland port concept

With the original definition of an inland/dry port dating back to 1982, the concept has attracted much attention and evolved with the development of freight transportation industry (Cullinane, Bergqvist, & Wilmsmeier, 2012). In addition to its inland location “away from traditional land, air, and coastal borders” (Leitner & Harrison, 2001, p. 69), an inland port usually has direct links to seaports with multiple transportation modes, usually rail and road, where shippers/carriers/consignees can deliver or receive the goods in intermodal containers, as they directly leave or pick up the goods at the seaport (Woxenius et al., 2004). According to Jaržemskis and Vasiliauskas (2007), inland ports are container- and multimodal-oriented, having direct links to seaports by rail or road and all kinds of logistics facilities that shipping lines and freight forwarding agents need in a seaport. So far, there has been no unified definition of an inland port; however, researchers seem to agree that an inland port is an inland site performing traditional seaport functions (Cullinane & Wilmsmeier, 2011). Accordingly, this concept has become vaguer since inland ports vary in terms of different functions. Terms such as “inland clearance depot”, “inland container depot”, “intermodal freight center”, “inland freight terminal”, etc. (Jaržemskis & Vasiliauskas, 2007, p. 208) have been used as synonyms of “inland ports” (Cullinane & Wilmsmeier, 2011; Roso, Woxenius, & Lumsden, 2009). Two key features making inland ports distinct from other inland nodes are the containers transferring between different transportation modes and the processing of international trade (“Inland port”, Wikipedia). Past literature also discusses other inland port features. Originally proposed by Trade Point USA, an inland port has a series of assets

including multiple modes of transportation infrastructure, proximity to an area with a large population or high manufacturing capacity, accessibility to seaports, large shippers, advanced information technology, public-private cooperation, councils involving various stakeholders, aggressive marketing, and capable management for coordinating stakeholders and developing the inland port (Walter & Poist, 2003). The authors then develop a list of inland port attributes adding “multi-purpose business center, port of entry for customs clearance and inspection, public and bonded warehouse” with “foreign trade zone and travel plaza” (p. 44). According to Walter and Poist (2004, p. 583), “major private investors, large populations nearby, and air transportation facilities” are critical features to inland port success. Allen (2008) adds two more features to the inland port concept that an inland port “occupies at least 1,000 acres of total land” and “accesses to a strong local labor pool” (Heitman section, para. 5). Furthermore, Zeng et al. (2013, p. 237) contend that “direct rail connections to a coastal port and strong economies of scale” are important inland port features.

With regard to inland port classification, Woxenius et al. (2004, p. 8) categorize inland/dry ports into “distant, mid-range, and close inland/dry ports” in terms of different functions and locations. Figure 1 presents the transport connections between a seaport and its hinterland via three types of inland/dry ports.

Figure 1. A seaport with a distant, mid-range, or close inland port



Source: Y. Wang and J. Wang (2010)

Outside the seaport's traditional hinterland (usually beyond 500 km), a distant inland port enables rail to be a competitive mode of transportation due to the long distance and the large volume of goods (Y. Wang & J. Wang, 2010). Other benefits different inland port stakeholders could gain are presented in Figure 2. The mid-range inland port consolidates goods from different shippers and transports them to the seaport by dedicated train, thus relieving the burden of seaports' stacking area (Woxenius et al., 2004). The close inland port can relieve city and seaport congestion by consolidating freight from road transport and delivering via short line rails (Roso et al., 2009). Another classification of inland/dry ports as "seaport-based, city-based, and border inland/dry ports" put forward by Beresford et al. (2012, p. 80) is similar to that of Woxenius et al. (2004) (Monios & Wang, 2013). The benefits of

three kinds of inland ports that various inland port stakeholders have are listed in the following figure.

Figure 2. Benefits of inland port actors under different types of inland ports

	Distant	Midrange	Close
Seaports	+Less congestion +Expanded hinterland +Interface with hinterland	+Less congestion +Dedicated trains +Depot +Interface with hinterland	+Less congestion +Increased capacity +Depot +Direct loading ship-train
Seaport cities	+Less road congestion +Land use opportunities	+Less road congestion +Land use opportunities	+Less road congestion +Land use opportunities
Shipping lines and forwarders	+Improved service	+Improved service	+Improved service
Rail and intermodal operators	+Economies of scale +Gain market share	+Day trains +Gain market share	+Day trains +Gain market share
Road operators	+Less time in congested roads and terminals	+Less time in congested roads and terminals	+Less time in congested roads and terminals +Avoiding environmental zones
Shippers	+Improved seaport access +"Environment marketing"	+Improved seaport access	+Improved seaport access
Society	+Modal shift +Less infrastructure +Lower environmental impact +Job opportunities	+Modal shift +Less infrastructure +Lower environmental impact +Job opportunities	+Lower environmental impact +Job opportunities

Source: Bask, Roso, Andersson and Hamalainen (2014)

In terms of directional development, inland ports can be divided into “Inside-Out” and “Outside-in” models based on whether the inland port is driven from the landward or seaward side (Ng & Cetin, 2012, p. 759; Wilmsmeier et al., 2011, p. 1381). Originally, inland ports were developed from landward side due to the need of promoting local economies in landlocked regions under control of public authorities or inland transportation companies (Wilmsmeier et al., 2011). Differences exist in implementing “Inside-Out” inland ports in different countries in terms of different roles that public and private sectors play in the

development process (Bask et al., 2014). Recently, there is a trend of establishing “Outside-In” inland port since seaports are losing their monopoly status in supply chains; they need these inland ports to maintain or even enlarge their hinterlands (Monios, 2011). These inland ports can be driven by public bodies such as seaport authorities or private bodies such as shipping lines or seaport terminal operators (Bask et al., 2014). “Outside-In” inland ports are comparatively small since they focus more on seaport accessibility whereas “Inside-Out” inland ports aim to increase logistics capability; they are more difficult to develop due to the lack of seaport authorities, shipping lines or seaport terminal operators’ influence outside the seaport area (Monios & Wang, 2013).

Projects involving a public-private partnership can get better results than those operated by purely public or private sectors, in the aspect of project quality and return on investment (Biljana, Tamara, & Tamara, 2014). Vandervoort and Morgan (1999) recommend that the successful implementation of an inland port requires an integrated system where basic infrastructure and maintenance are available, and both public and private investments are optimized with the provision of appropriate laws, regulations, and institutions. In spite of the significance of collaboration between public and private sectors, it might be difficult since public and private sectors have totally different goals, especially in logistics infrastructure development (Bergqvist, 2008). However, logistics infrastructure projects funded wholly by public investment lack enough resources to reach the level desired by facility users, thus needing investment from the private sector, which operates the logistics services (Bergqvist, 2008). In addition, the involvement and expansion of private investments will be useful to ease governments’ financial burden since logistics infrastructure projects are rarely profitable

(Beresford et al., 2012). UNCAD (1991, p. 2) suggests, “public ownership and private operation on a common user basis are perfectly feasible and indeed occur in a number of countries”. Cullinane et al. (2012) also observe that in practice public–private partnerships exist throughout the whole development of inland ports to a large degree. Furthermore, despite the public ownership, there is a trend for attracting more private investments due to the greater efficiency of the private sector in operating transport terminals, compared to the public sector (Rodrigue, Slack, & Notteboom, 2013).

The public-private partnerships literature categorizes seaports into “landlord ports”, “tool ports”, “public service ports”, and “private service ports” (World Bank, 2007, p. 82-83). This investment model can be applied to inland ports (Beresford et al., 2012). In a landlord model, the government acts as a landlord providing the basic infrastructure while private actors undertake terminal operations. The private sector also needs to provide and maintain their own terminal equipment and buildings including offices and warehouses (World Bank, 2007). Hence, private actors are looked upon to make considerable investments. In a public service model, the government undertakes all investment in infrastructure and superstructure (equipment and buildings) as well as inland port operations (Beresford et al., 2012). A tool port model falls in between the public service model and the landlord model where government invests in all infrastructure and superstructure and covers most operational activities while the private sector takes on some of the cargo handling services (World Bank, 2007). A private service model has the private sector owning all equipment and infrastructure (World Bank, 2007).

CentrePort Canada is a distant inland port in view of its central location in North

America, far from any seaports. It is also an “Inside-Out” inland port motivated by the Province of Manitoba to promote global trade and economic growth. Largely financed by the Province of Manitoba and Government of Canada, CentrePort Canada is in a landlord model but is endeavoring to generate more private investment.

In spite of the various inland port terminologies, in practice, people might not strictly name these inland terminals according to their definitions; what really matters are the functions of the inland terminals (Leitner & Harrison, 2001). Ng, Padilha, and Pallis (2013, p. 46) describe the “bureaucratic” and “logistical” roles of an inland port, with “bureaucratic” role referring to a series of customs services, while the “logistical” role relates to activities that can improve service quality and decrease costs. Rodrigue, Debie, Fremont, and Gouvenal (2010, p. 5-6) claim that an inland port has two categories of functions: “transport functions” and “supply chain functions”. An inland port serves as a “satellite terminal”, “load center”, or “transmodal center” from a transport perspective (Rodrigue et al., 2010, p. 5-6). These three terms can be regarded as synonyms of close, mid-range, and distant inland port in terms of functional characteristics (Monios & Wang, 2013). As for supply chain functions, an inland port offers value-added logistics services such as cargo handling, consolidation and deconsolidation, transloading, storage of cargoes and containers, postponement, maintenance and repair of containers and handling equipment, packaging, labeling, electronic data exchange, customs procedures including customs clearance, inspection and quarantine, tax collection, bonded warehousing, etc. (Ng & Cetin, 2012; Rodrigue et al., 2010; UNCTAD, 1991; Wang & Wei, 2008; Zeng et al., 2013).

2.2 Industrial location theory and location factors

Location theory, a popular research area in both economics and geography, deals with the geographical location selection of different economic entities (Chan, 2011; Song & Liu, 2013). In particular, industrial location theory, initially formulated by Alfred Weber in 1909, examines where and why a firm is located based on specific location factors (Song & Liu, 2013). Weber's theory is limited to determining the optimal location for manufacturing firms in a simplified world (Smith, 1971). He puts forward three locations factors: transportation costs and labor costs (general regional factors) as well as agglomerative factors (local factors); among them, transportation cost is the most important factor so that the basis of this theory is to find a minimum-transportation-cost location (Smith, 1981). Weber (1957) introduces the material index, the ratio of the weight of raw materials to that of finished products, to find out whether an industry should locate closer to the source of raw materials or to the market. If the index is greater than one, which means the production process is weight-losing, the industry should be located closer to the source of raw materials to minimize transportation costs. If the index is smaller than one, a weight-gaining production process determines a market-oriented industry (Smith, 1971). There are two situations in which industry could be moved from the minimum-transportation-cost location to other places involving the two other location factors mentioned above; one is where the labor is so cheap that the total saving in labor costs surpasses the extra transportation costs (Smith, 1981). The other diversion is that industries could agglomerate if the agglomeration economies exceed transportation and labor cost savings (Weber, 1957).

Weber's theory aims to find an optimal location to minimize costs and maximize profit, which assumes decision makers to be "economic man", who is all-knowing and has perfect

decision-making capability (Smith, 1981, p. 108-110). However, there is no necessary for firms to find the optimum location and decision makers in reality have limited information and knowledge as well as limited ability to use them, thus promoting the development of behavioral industrial location theory (Smith, 1971). This theory enables industrialists to find a satisfactory location in a world of uncertainty, putting more value on “internal (size, age, etc.)” and “entrepreneurial (previous experience, residence, etc.)” factors instead of the “external” factors considered in Weber’s least-cost theory based on company goals (Chapman & Walker, 1991; Miguel & Josep-Maria, 2011, p. 133). According to Mueller and Morgan (1962), in addition to profit maximization, there are other factors to be taken into consideration when dealing with location decision issues. Cyert and March (1963) suggest that there are incompatible goals in different department with diverse functions. Dicken (1971, p. 427-28) claims that firms have multiple objectives including “profits, sales volume, market share, production costs, assets, prestige, growth, and survival”; he also admits that goal conflicts exist, especially when ownership and management are separate. Hamilton (1974, p. 14) points out that firms pursue different levels of profitability and a number of them have other targets such as “growth of the firm, larger control of the market for particular products, diversification of interests, entrepreneurial satisfaction or self-preservation”.

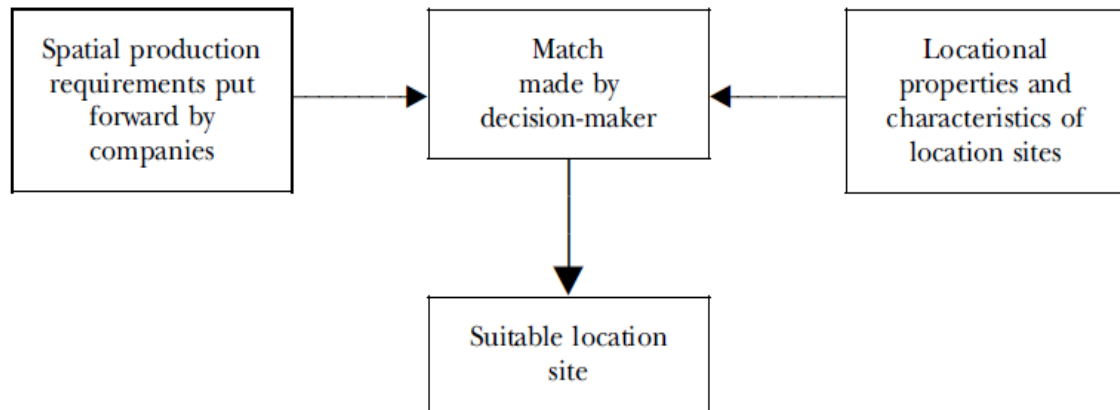
The industrial stagnation and decline during the 1980s due to the economic recession lead to a significant shift in the location of manufacturing companies, thus stimulating the development of structural location theory (Chapman & Walker, 1991). Companies are examined in a wider geographic environment from economic, social, and political perspective (Chapman & Walker, 1991; Witlox, 2000). Labor issues such as wages and unionization as

well as regulations are main concerns in this theory (Miguel & Josep-Maria, 2011).

Both behavioral and structural concerns should be evaluated in finding a suitable location for a company, however, the two relevant theories are “monocausal”, thus requiring a “relational model” to integrate these theories and balance the location choice and constraints (Timmermans & Heijden, 1987, p. 302; Witlox, 2000, p. 144). Therefore, the site selection issue can be regarded as a process to match the firms’ spatial requirements with the characteristics of the specific locations (Witlox, 2000). He thinks of a site as a suitable location only if the features of the site relationally match with the specific requirements proposed by the company. Witlox (2000) also observes that different industries have different spatial requirements and the importance of location factors varies from industry to industry, or even company to company. In addition, he states that the process is two-way so the two inputs involved have reciprocal relationships with each other, for example, there are so-called “non-compensatory” location factors that are so indispensable that site alternatives without such features will be automatically rejected (p. 139); location sites may have some restrictions (but are inherent characteristics) that will prevent companies from locating at them (Witlox, 2000). Figure 3 illustrates Witlox’s (2000) matching process of discovering a suitable location, which is modeled by a decision table approach to match companies’ spatial requirements with location sites’ characteristics. Although the focus of this study is not to find a suitable location but to assess whether a designated location—CentrePort Canada, especially the North part, is suitable/attractive to manufacturing companies, Witlox’s (2000) framework is still appropriate since CentrePort Canada North’s attractiveness could be determined by matching the inland port features to location factors considered by specific

manufacturing companies.

Figure 3. Matching process for finding a suitable location



Source: Witlox (2000)

The site selection problem is a critical decision-making problem requiring very careful consideration for companies due to the huge amount of money invested, the difficulty of reversion, and the long time commitment (Ertugrul, 2011). The location decision is closely related to the “performance, profitability, competitiveness, and survival” of the firm as it could affect the company’s operation costs and revenues (Cebi & Otay, 2015, p. 331; Ertugrul, 2011). The company could have higher profit and better performance if a better location decision could be made (Kumar, Athawale, & Chakraborty, 2010). There are three kinds of site selection circumstances: new operations, relocation, or expansion as a result of changes in production capacity, product lines, or customer demand (Ertugrul & Karakasoglu, 2008; Kumar et al., 2010). The decision should be made from several alternatives by taking into account multiple factors from economic to social, from quantitative to qualitative, and from operational to strategic (Cebi & Otay, 2015).

The focus of early location theory is on manufacturing companies since at that time, from the early to mid-twentieth century, the manufacturing industry played a predominant role in the global economy (Kimelberg & Williams, 2013). Since businesses largely depend on production and sale of products, the location factors affect the production operation either directly or indirectly (Kimelberg & Williams, 2013; Kumar et al., 2010). Therefore, location factors which have significant importance are transportation costs, labor costs and availability, land costs, utility availability and costs, proximity to source of raw materials or markets, agglomeration, environmental regulations, public policies and taxes, etc. (Ertugrul & Karakasoglu, 2008; Kumar et al., 2010; Smith, 1971; Smith, 1981). However, the importance of transport costs has been on the decline (Chapman & Walker, 1991). In 1956, Greenhut includes demand factors such as the location of potential customers, the distribution of competitors, the significance of customer service, etc. (Chapman & Walker, 1991). In addition, Devi and Yadav (2013) involve transport facilities in the decision model and other researchers verify that access to airports, railways, or highways are important location factors to be considered in the manufacturing industry (An, Kang, & Lee, 2014; Kimelberg & Williams, 2013). In Mousavi, Tavakkoli-Moghaddam, Heydar and Ebrahimnejad's (2013) research, two benefit criteria-expansion possibilities and risks imposed on site are selected.

Mueller and Morgan (1962) conclude that the location of new operations, relocation, and expansion are driven by different determinants. For new operations, labor costs, proximity to markets, availability of skilled labor, industrial climate from the attitude of the state and the community toward industry, the tax bill, and proximity to materials are of major significance to manufacturing companies. For relocations, firms more consider lower labor costs, then tax

considerations, and then market factors. Expansions are sometimes similar to relocations; however, they have different location considerations: relocations put more emphasis on the cost of production, while expansions consider demand factors and efficient marketing more dominantly (Mueller & Morgan, 1962).

Location factors could be divided into two categories: tangible and intangible factors. According to Tabari, Kaboli, Aryanezhad, Shahanaghi, and Siadat (2008), tangible factors mainly consist of various costs such as land, transport, utilities, and raw materials. It is said that cost is regarded as the most common and crucial factor by decision makers in finding a suitable site location (Kimelberg & Williams, 2013). Other cost-based factors such as labor costs, taxes, unions and minimum wage laws, financial costs and incentives, and system and integration costs have been discussed by a number of researchers (e.g. Dogan, 2012; Hanson & Rohlin, 2011; Kimelberg & Williams, 2013; Mejean & Patureau, 2010). These factors appear to have different importance to different industries (Kimelberg & Williams, 2013). Dogan (2012) proposes other tangible factors including population, workforce availability, unemployment rate, financial risks level, etc. and intangible factors such as labor skill, climate, standard of living, community attitudes towards business and industry, etc. In addition to traditional/hard location factors which have been studied a lot, new/soft location factors relating to life quality such as landscape, housing costs, living amenities such as shops and restaurants as well as recreational assets, public transportation, hospitals, banks, and schools have recently been added into the site decision model (An et al., 2014; Kimelberg & Williams, 2013).

In past literature, two kinds of methodologies have been adopted to deal with the site

selection problem (Kimmelberg & Williams, 2013). Statistical models are one method, which are used more often, to assess the weights of location criteria and the rankings of site alternatives (Carlson, 2000; Ertugrul, 2011). Among these models, a fuzzy method is frequently used to eliminate vagueness and subjectivity of human thought and evaluations (Cebi & Otay, 2015). The advantages of using such models is that “the size and direction of relationships among factors that would be difficult to inquire about in a survey”, which is the other methodology, could be quantified (Carlson, 2000, p. 2). Its disadvantage lies in that factors need to be decided in advance so that some critical factors might be underestimated (Kimmelberg & Williams, 2013). As to survey, it is a good method to capture the significance of unquantifiable factors and to use open-ended questions to let the respondents add new location factors (Carlson, 2000). However, its responses will be challenged on whether the respondents are the right people to answer the questions and/or whether their answers have been deviated due to some development policies which are favorable for the company’s current operation (Carlson, 2000).

In conclusion, it is the location factors that matter for manufacturing firms to choose a site. However, location alternatives may have some intrinsic characteristics attractive or unattractive to certain manufacturers. In addition, policymakers could have valuable information about whether a specific project motivated to attract investment in manufacturing deserves to be supported (Lambert, McNamara, & Garrett, 2006). Therefore, it is reasonable to use Witlox’s (2000) framework to investigate whether CentrePort Canada features match the location factors proposed by manufacturers in order to evaluate the attractiveness of the inland port, especially the North part, to specific manufacturing operations.

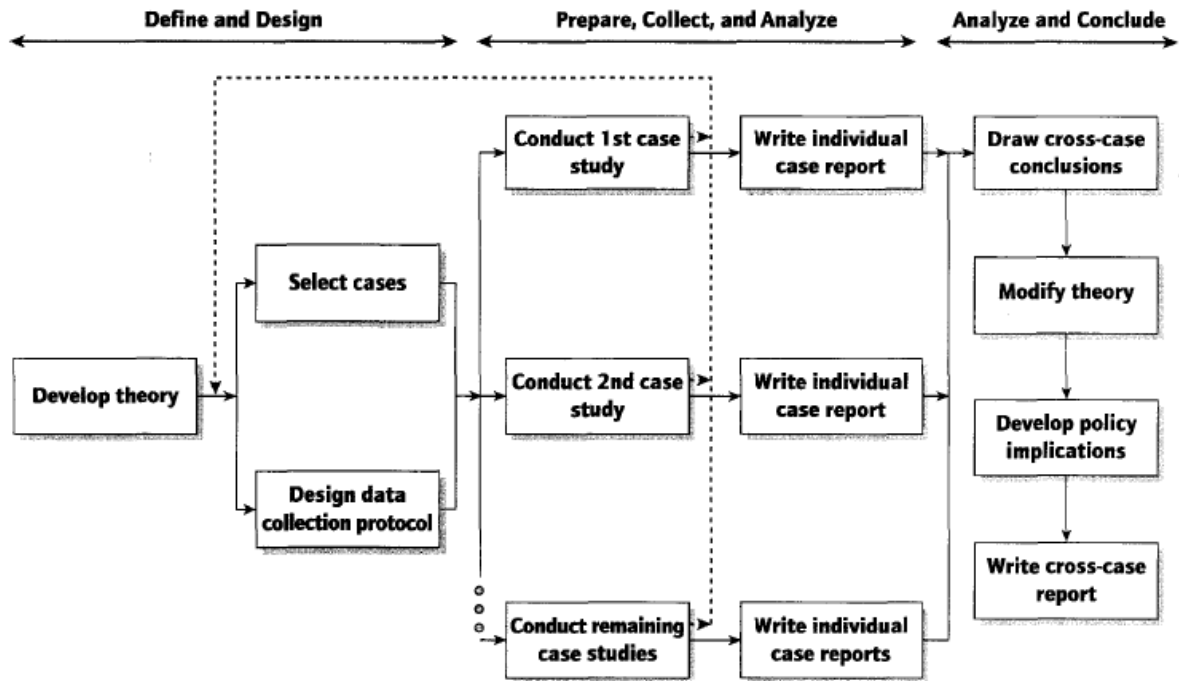
Chapter Three: Methodology

3.1 Background

This study has an exploratory nature since it aims to examine whether CentrePort Canada, especially the North area, is an attractive site for manufacturing companies to locate their businesses by identifying the location factors that those companies consider and matching CentrePort Canada features with these factors. Therefore, a qualitative approach is appropriate because a broad overview of the location factors and the impact of these factors on the attractiveness of CentrePort Canada could be explored; along with why the inland port is either attractive or unattractive to specific manufacturing firms could be justified.

In this research, a multiple case study approach involving in-depth semi-structured interviews and secondary data is adopted. According to Yin (2003), the process of a multiple case study method could be illustrated by the following flow chart. The process starts with finding appropriate companies and interviewees and developing an interview protocol. Interviews are conducted after interviewees have been identified. After that, within-case analyses are made by incorporating interview results and secondary data, and then cross-case comparisons are made. Ultimately, results of the study may support existing theory, rather than propose to modify it.

Figure 4. Multiple case study process



Source: Yin (2003)

3.2 Unit of analysis

CentrePort Canada is located in Winnipeg, where manufacturing is the largest industry (Economic Development Winnipeg, Winnipeg: Overview of key sectors). In addition, CentrePort Canada is making every effort to attract more business, especially in advanced manufacturing, agribusiness & food processing, transportation & logistics, energy & mines, biomedical, and e-commerce (CentrePort Canada, Industry Sectors). Therefore, it is reasonable and meaningful to evaluate the attractiveness of CentrePort Canada from the view of manufacturers.

In view of its exploratory nature, this study focuses on manufacturing companies in Winnipeg since they will have more knowledge about CentrePort Canada, and it is much easier to access to them. Manufacturing companies can be categorized into four groups:

established companies located in CentrePort Canada South, new companies located in CentrePort Canada North, established firms located elsewhere in Winnipeg and new businesses located elsewhere in Winnipeg. In fact, these companies have made their site decision either before or after the establishment of CentrePort Canada. For new tenants of CentrePort Canada (North), they are directly attracted by the inland port so that they are the most suitable to be analyzed. For companies located in CentrePort Canada South long before the inland port has been built, regarded as long-term tenants by the inland port, they might benefit from its new features. CentrePort Canada seems to be unattractive to manufacturing firms located elsewhere, whether the firm is well-established or new to the city. Therefore, it is worthwhile to figure out why they think of the inland port as a less attractive location than where they are located. New companies located elsewhere in Winnipeg are excluded from this study, partly due to the difficulty of identifying these companies. Analysis of the three types of manufacturing companies, in terms of their operations and preference on location factors, helps CentrePort Canada know what features will be appreciated and what kinds of manufacturing firms are more likely to be attracted.

Each manufacturing company is regarded as a case. Eight case studies are conducted in this study, with three established companies located in CentrePort Canada South (coded as Company A, B, & C), one established firm located elsewhere in Winnipeg (coded as Company D), and four new businesses located in CentrePort Canada North (coded as Company E to H). Companies located in CentrePort Canada, both long-term operations and new businesses, are selected from the list posted on the inland port website. Three of seven established manufacturing companies located in CentrePort Canada South and four of seven

new manufacturing operations consist of seven case studies. These companies are selected due to their willingness to take part in the research project. Only one established manufacturing firm located elsewhere in Winnipeg is chosen since this kind of firm has little to do with the inland port unless they have plans to expand and will put the inland port into consideration. However, it is hard to identify these firms. In addition, it is impossible to include half of the established manufacturers located elsewhere in Winnipeg in this study in a limited time. This company is chosen since it has been in Winnipeg more than 80 years and is known to have considerable supply chain knowledge and expertise. Therefore, there are four established and four new manufacturing businesses in this study. The company profile is summarized in the following table.

Table 1. Interviewed company profile

Company Category	Company Code	Company Headquarter
Established companies located in CentrePort Canada South	Company A	Winnipeg
	Company B	Winnipeg
	Company C	Winnipeg
Established companies located elsewhere in Winnipeg	Company D	Winnipeg
New companies located in CentrePort Canada North	Company E	Winnipeg
	Company F	Winnipeg
	Company G	Montreal
	Company H	U.S.

Source: Author

3.3 Data sources

In this study, data are collected from multiple sources including in-depth semi-structured interviews and secondary data.

(1) **In-depth semi-structured interviews:** In each case, one individual was interviewed, with eight interviewees in total. Since the interviewees are all top executives, such as president, vice president, director of supply chain, regional manager of manufacturing, they are viewed as the right person to answer the questions because they have sufficient information and knowledge about their companies' histories, operations, development, and considerations on location decision. Specifically, 4 face-to-face interviews and 4 telephone interviews were conducted in this research. Each interview lasted about one to two hours. Interviewees were contacted in advance by e-mails or telephone to encourage participation and receive consent.

The interview questions are semi-structured following an interview protocol (Choi & Hong, 2002). Main questions include why they are located at their current site, what location factors they consider in order to locate a manufacturing facility, their future expansion plans, how the inland port benefits them, and what inland port features are attractive. The order of questions (see Appendix B for all interview questions) in each interview varied according to the answers given by the specific interviewee. In addition, interviewees were allowed to introduce new issues. When conducting these interviews, a digital recorder was used to record the whole process by obtaining permissions from all interviewees. After finishing each interview, the specific interview was transcribed and sent to the interviewee for verification, enhancing both the validity and reliability of this study. Follow-up phone calls and e-mails

with the same interviewees were used when more information was needed; this step ended by reaching the “data-saturation point”- where no more new information could be obtained (Choi & Hong, 2002, p. 474; Eisenhardt, 1989).

(2) **Secondary data:** Secondary data are gathered to supplement the semi-structured interviews. This kind of data mainly focuses on information about CentrePort Canada and the interviewed companies. Data are gathered from documents and other online sources. Documents consist of CentrePort Canada’s annual reports and web-based documents, the selected manufacturing companies’ reports and other documents, government web-based documents, academic literature, etc. Other online sources include but not limited to CentrePort Canada’s website, interviewed manufacturing companies’ websites, government websites, news releases, and emails back and forth. These data have been reviewed several times in order to get the latest data and extract the more relevant and valuable data.

Chapter Four: Centreport Canada and Its Features

In terms of economic importance of the transportation and trade industry in Manitoba and Winnipeg, in addition to its central location in North America (CentrePort Canada Annual Report, 2010), CentrePort Canada was implemented (CentrePort Canada Annual Report, 2010) to further boost development of the industry and local economy. It also plays a critical role in the global supply chain network. It is the first and largest Canadian inland port having unique access to three transportation modes located in the City of Winnipeg and the Rural Municipality of Rosser, Manitoba (CentrePort Canada Annual Report, 2014). It is managed and marketed by CentrePort Canada Inc., founded by Manitoba legislation called the CentrePort Canada Act that was passed on October 9, 2008 (CentrePort Canada Annual Report, 2010). The Act created the mandate and powers of CentrePort Canada Inc. and set the boundaries of the 20,000-acre tri-modal inland port adjoining Winnipeg James Armstrong Richardson International Airport (CentrePort Canada Annual Report, 2011a). CentrePort Canada Inc. engages stakeholders in government, business, the transportation industry, labor, post-secondary institutions, and the community it serves to build a public-private partnership (CentrePort Canada Annual Report, 2011a).

CentrePort Canada provides businesses a cost-effective environment. Winnipeg boasts the lowest overall business costs (including manufacturing) in Western Canada and all U.S. cities listed by KPMG's Competitive Alternatives (2016) report (See Table 2 & 3). Such cost advantage is predominantly derived from affordable land price compared to most major Canadian cities, one of the most competitive wages (including manufacturing sector), government-funded employee health care costs in Canada, and one of the lowest energy costs

(especially hydroelectricity) in North America (Economic Development Winnipeg, Competitive Advantages). The inland port also enables firms to access other incentives including “low corporate income taxes; no inventory tax; generous manufacturing investment tax credits on buildings, machinery and equipment; new data processing tax credit; and full access to intellectual property via the U of M, with no royalties until IP is commercialized” (CentrePort Canada Annual Report, 2014, p. 6). Companies can have access to a “skilled, stable, and affordable” labor market (CentrePort Canada Annual Report, 2013, p. 5) and “training incentives and immigration recruitment to match industry needs” (CentrePort Canada Annual Report, 2014, p. 6).

Table 2. Business costs in western Canadian cities and selected U.S. cities

City	Rating
<i>Winnipeg, MB*</i>	<i>84.9</i>
Saskatoon, SK*	85.9
Edmonton, AB*	86.4
Calgary, AB*	87
Cedar Rapids, IA	93.8
Omaha, NE	93.9
Sioux Falls, SD	94.1
Fargo, ND	94.3
Madison, WI	95.7
Kansas City, MO	96.2
Minneapolis, MN	96.8
Chicago, IL	98.3
* . western Canadian cities	

Source: KPMG’s Competitive Alternatives (2016)

Table 3. Manufacturing costs in western Canadian cities and selected U.S. cities

City	Rating
<i>Winnipeg, MB*</i>	<i>90.6</i>
Edmonton, AB*	91.2
Saskatoon, SK*	91.3
Calgary, AB*	91.4
Omaha, NE	96.7
Cedar Rapids, IA	96.9
Fargo, ND	97.6
Madison, WI	97.7
Sioux Falls, SD	97.8
Kansas City, MO	98.6
Chicago, IL	98.9
Minneapolis, MN	99
* . western Canadian cities	

Source: KPMG's Competitive Alternatives (2016)

The inland port works closely with Shindico Realty and Cushman & Wakefield Winnipeg, two real estate corporations, to market prime industrial land for sale or lease which is ideal for business development in advanced manufacturing, agribusiness & food processing, transportation & logistics, energy & mines, biomedical, and e-commerce (CentrePort Canada, Industry Sectors; CentrePort Canada Annual Report, 2011a). Since CentrePort opened for business in November 2009 (CentrePort Canada Annual Report, 2010), more than 250 acres have been sold to 44 new companies within the CentrePort footprint (CentrePort Canada, Industrial Parks).

Just one hour north of the U.S. border, CentrePort Canada's strategic geographical location allows easy access to key trade gateways in four directions by rail and road

(CentrePort Canada Annual Report, 2013). The Atlantic Gateway to the east connects CentrePort to Europe, the Middle East, and Asia through the Ports of Thunder Bay, Montreal, and Halifax; the gateway to the south enables CentrePort to reach the U.S., Mexico and beyond via Ports of Houston and New Orleans as well as Ports of Manzanillo and Lazaro Cardenas; in addition, it has access to China and Pacific Rim via Port Metro Vancouver and Port of Prince Rupert. CentrePort also has a direct connection to the Port of Churchill as a staging area for northern Canada (CentrePort Canada Annual Report, 2013).

Tri-modal transportation including rail, road, and air provides CentrePort Canada with corresponding cargo advantages. The inland port has access to three Class 1 railways, namely Canadian National Railway, Canadian Pacific Railway, and Burlington Northern Santa Fe Railway (CentrePort Canada Annual Report, 2013). CentrePort Canada Inc. is now building a “common-use rail facility and adjacent industrial park for rail-intensive business” (CentrePort Canada Annual Report, 2013, p. 6). CentrePort is also a significant trucking center with access to national and international trucking routes (CentrePort Canada Annual Report, 2013). It has received \$212.4 million for constructing CentrePort Canada Way (CCW), a 10-km highway helping the inland port reach key gateways and transportation corridors, coming into use in November 2013. CCW can help trucking companies realize the “five minutes to 55 miles per hour” goal for moving freight (CentrePort Canada Annual Report, 2014, p. 10). A cost-benefit analysis has been done showing that CCW could provide more than 3000 jobs, save about “\$220 million by decreasing costs related to fuel, accidents, and time lost, and reduce greenhouse gas emissions by nearly 600,000 tonnes and carbon monoxide by 1.5 million tonnes” (CentrePort Canada Annual Report, 2011a, p. 6). The Manitoba government

declared that it intends to increase the length of CCW by 100% to bypass Headingley and intersect with the TransCanada Highway (“CentrePort Canada Way being extended”, 2014). Situated in CentrePort Canada, Winnipeg James Armstrong Richardson International Airport provides “24/7 operations, worldwide freight-forwarding and is ranked first in Canada for dedicated freighter aircraft movements” (CentrePort Canada Annual Report, 2012, p. 6). The airport provides late (9 p.m.) cut off for overnight parcel delivery, which is a great advantage for e-commerce (CentrePort Canada Annual Report, 2014).

In addition, the inland port offers investors a suite of single-window services. One of these is access to Foreign Trade Zone benefits including sales tax relief, duty deferrals, and three custom-bonded warehouses (CentrePort Canada Annual Report, 2010; CentrePort Canada Annual Report, 2015). Another is the special planning area, now in operation for CentrePort Canada North, streamlining the land-development approval process for companies to do business more quickly and efficiently (CentrePort Canada Business Plan, 2016b). Further, infrastructure servicing including water and wastewater is being extended in phases to CentrePort Canada North; the first phase is planned to be in service in 2017 (CentrePort Canada Annual Report, 2016a).

The above mentioned inland port features are adopted in this study to examine whether these features match the location factors considered by different manufacturers, to determine whether CentrePort Canada, especially the North part, is an attractive location. These features are listed in the following table.

Table 4. CentrePort Canada features

Central location in North America
Located at the hub of key trade gateways in all four directions
Access to all major Canadian container ports
Direct access to North America's only deep water Arctic seaport-Port of Churchill
Lowest overall business costs of major cities in US Midwest & Western Canada
One of the lowest energy costs in North America
Affordable Land Price
Prime industrial land ready for sale/lease for any size development
Competitive wages and government-funded employee health care costs
Low corporate income taxes including 0% small business corporate income tax
Manufacturing investment tax credits on buildings, machinery and equipment
Research and development tax credits in Canada
Worker training incentives and immigration recruitment to match industry needs
No inventory tax
New data processing tax credit
Access to intellectual property via the U of M; no royalties until IP is commercialized
Access to CN, CP and BNSF railways
International airport providing freight-forwarding services
CentrePort Canada Way (CCW)—achieving “5 minute to 55 mph”
Plan to double CCW in length to improve connections to the Trans-Canada Highway
Common-use rail facility and a new Rail Park
Foreign trade zone single window services access
Special planning area for streamlined land-development approvals process

Source: CentrePort Canada website and annual reports

Chapter Five: Case Study Results and Discussions

5.1 Established companies in CentrePort Canada (South)

Among the 15 established companies listed on the CentrePort Canada website, seven of them are manufacturing firms which have been located in the CentrePort Canada footprint for a long time, much longer than the inland port has existed. Three manufacturing companies have been agreed to be interviewed in this group which are coded as Company A, B and C. All of them are Winnipeg-based companies.

5.1.1 Company A

Company A is a medium-sized manufacturer with high-value-added products that is the world leader in its niche. It is an export-driven company from the very beginning, with 90% of its sales going to foreign markets. It serves customers in three categories: corporate or commercial businesses, government-based or private institutions, and universities and colleges. Fifty-five percent of its products go to North America, especially the continental USA and forty-five percent go to the rest of the world.

There are no local customers in Winnipeg for Company A. The company is located here for historical reason—the business started in Winnipeg. The Winnipeg facility has almost everything in operation from design and manufacturing to administration, accounting, marketing, etc. except equipment installation, because the company is not on the client side where final assembly takes place. The company also has facilities where the market is large enough, but all manufacturing is done in Winnipeg.

The company chose the current site according to two major considerations. The first was to acquire sufficient land to house a suitable building and parking area under a fair price. It's

not the size of land but the services at the site that matters. The second aspect is about the services. The site needs a secure area for parking and must be close to public transportation so staff could either drive or take a bus to the company. It is critical for employees to have access to the building, and to get trucks and customers in.

CentrePort Canada's benefits to businesses are mainly twofold: 1) remove time or cost in transportation; 2) affordable real estate relative to elsewhere in Winnipeg¹. For outbound logistics, truck transportation will be used in Canada and the U.S., while for other markets, products will be transported from truck to rail and then go to container seaports. Since Company A outsources all of its logistics, it will not get benefits directly from the easy transportation provided by the inland port. In addition, since Company A exports to all corners of the globe, Winnipeg is as convenient a location as anywhere from which to export.

However, because the majority of products will go very long distances and the main transportation mode is trucking, decreasing time is not important in the operation. At the same time, there will be almost no difference in transportation cost no matter where the company is located in Winnipeg. It seems that those who are in the transportation business could benefit through the inland port by improving their efficiency. For those who are in manufacturing, it is really about whether they can get affordable real estate, and whether it is convenient for their staff to access the facilities. In Company A's case, CentrePort Canada North is now absolutely "unattractive". Not only would it cost the company a lot to move the whole team to a new facility, but the services in CentrePort Canada North are poor. There is obviously no public transport at that area but many staff travel to work by bus. In addition,

¹ Interviewee 1, September 26, 2016

water servicing is crucial to manufacturing while this kind of service is not available in the north of the inland port. These services are an important concern for the company so that a location in the City of Winnipeg makes sense.

5.1.2 Company B

Company B is the world leader in manufacturing of high quality agricultural equipment. It is also an export-oriented business, selling its products in over 40 countries on 6 continents. The company serves its customers, large OEMs (original equipment manufacturers) and other dealers and distributors, through long-term agreements.

The company is located in Winnipeg and many of its products go to western Canada and the U.S. It is well situated relative to a large part of its customer base. The company relocated to its current site more than 40 years ago. The key driver of this relocation was business expansion, and now the company has plenty of land even for further expansion. Built from the ground up, every piece of Company B equipment is designed and manufactured at the Winnipeg facility, mainly for control purposes and manufacturing strategy. It is better to be centrally-located because control of quality could be easily achieved, as you only need to validate one process, and the problem for transferring complicated technology to additional sites is eliminated. The facility also includes research and development, engineering, quality control, parts, marketing and supporting departments, and a new distribution center. The company also has sales offices in almost every country where customers there buy its products. When the market has large enough customers and a significant amount of business, a distribution center will be build for product distribution.

For Company B, CentrePort Canada North is not attractive because there are no

financial benefits it could get from that. Regarding transportation, it ships materials in or equipment out by truck, exports by ocean freight in containers, uses air only in emergencies, and has very little train freight. Further, transport is all done by outsourced companies. One thing that is helpful is CentrePort Canada Way in terms of bringing people in. It is a nice highway for people to come to work—although it doubles the distance, there are no traffic lights so that it is more predictable in terms of time. On the real estate side, since the company has acquired affordable and large enough land for operation, there is no way for Company B to build a new facility in the northern part of the inland port. In other words, there is no service the company needs from CentrePort Canada North.

5.1.3 Company C

Company C is an aerospace industry leader manufacturing aerospace systems and components. The company serves major aerospace OEMs with 80%-90% of its products going to global markets, such as the U.S. and France.

The company has almost no local customers. The primary reason for its location dates back to the origin of the company in Winnipeg. Aerospace is one of the key industries in the Winnipeg economy. Winnipeg's low operating cost for aerospace manufacturing and high internal rates of return on investment in an aerospace manufacturing plant attract aerospace firms. The reasonable labor rates and partnerships with educational institutions such as Red River College, University of Manitoba, and high schools, have made the aerospace industry continue to thrive.

Company C has more than 10 manufacturing facilities all over the world, including the one in Winnipeg. They have been chosen based on almost the same kind of location

considerations: cost of site and operations; availability and cost of workforce; tax credits, such as (in Canada) SR & D (Scientific Research and Experimental Development) and CCA (Capital Cost Allowance); and government-supported education and training programs. In addition, all sites are located close to a local airport.

There are currently no tangible benefits that Company C could obtain from CentrePort Canada. In other words, there would be no increased cargo volume or activities witnessed in business operations. For Company C, logistics only accounts for a small component of its business and the company outsources 99% of its trucking transportation. It also uses air cargo, representing 20%-30% of its logistics. But it is already located near the airport. For operation, the company does not need a lot of space since manufacturing is started after an order comes in, so there is almost no inventory and warehousing in its business. In addition, the company has expanded on its current site for five years and there is no plan for further expansion in the years to come. However, the company expects that a common holding area could be established in CentrePort Canada for storage of hazardous/flammable/temperature sensitive materials that the aerospace industry or other manufacturing companies use².

5.1.4 Discussion

Although all three companies are historically located in Winnipeg, such central location in North America is essential to these businesses since they are export-driven. From here, shipment of goods to points across North America and to seaports/airports can be easily achieved and staff can easily pivot to points east, west, south and abroad. Winnipeg's time zone is conducive to business in general as well³.

² Interviewee 5, December 16, 2016

³ Interviewee 1, September 26, 2016

The Province of Manitoba provides several generous tax credits to business operations. The two closely related to the manufacturing sector are manufacturing investment tax credits on buildings, machinery and equipment, and research and development tax credits. It is not surprising that all three companies regard these two tax credits attractive to manufacturing. R & D (research and development) is of great significance especially for Company C since it is in a high-technology industry. Winnipeg has an excellent R & D environment where its post-secondary institutions work closely with the business community to ensure that their graduates are trained with the specific skills required by industry (Economic Development Winnipeg, Research & Development). Company C has also been involved and benefited from the education and training programs provided by the provincial government. Although both companies need highly-skilled labor, unlike Company C, Company A relies more on its own training programs since its business lies in a very specialized area where it is hard to find a well-trained designer or engineer outside.

In logistics operation, all three companies mainly use truck transportation by common carriers. The newly-built CentrePort Canada Way only benefits employees who do not like to drive through traffic, however, not a lot people in these companies come to work by this road. Rail is used by Company A for delivering products to seaports and seldom by Company B. Company C has air services in operation while Company A and B only consider them in emergency circumstances. However, the companies always have the airport nearby.

Regarding real estate, Company A does not need a lot of land and it tends to find places close to its current facility in terms of expansion. It has recently obtained such a building. Company B has acquired plenty of land so that no more real estate is needed. In Company

C's case, it just expanded at its current site and a further expansion will not be considered at present. Therefore, all three companies are satisfied with their current location and there is no motivation for them to move to or open a new operation in CentrePort Canada North.

In summary, as an overall program, CentrePort Canada has almost no impact on these companies located in its south footprint. All three companies have been operation and set up their logistics decades before CentrePort Canada started. They can get organic growth whether there is an inland port or not.

Although their businesses have little to do with CentrePort Canada, their facilities in Winnipeg show similarities and differences in location factors taken into account when choosing a production site.

All three companies regard cost of operation as important, with land cost, labor cost, and energy cost included. Access to sufficient hardworking and educated labor is also essential to manufacturing facilities. The views on land availability are different. Company A and C do not need a lot of space while Company B tends to occupy a large piece of land. Company A requires the site to be close to public transportation as a soft location factor. In addition, Company C puts emphasis on the R & D and government-supported training programs. For business like Company C, the site should be near an airport. In terms of the nature of their business, all three facilities are neither close to suppliers nor customers. However, since Company C has production plants in other places, proximity to customers becomes a determinant.

5.2 Established companies in elsewhere in Winnipeg

In general, Centreport Canada has nothing to do with businesses outside its footprint.

Therefore, it makes sense to just include one major company, being coded as Company D, in this group. Manufacturers who have plans to expand and relocate to CentrePort Canada as a potential site are not considered due to difficulties in finding such firms.

5.2.1 Company D

Company D is a Winnipeg-based vehicle manufacturer acting as a dominant player in the North America market. All customers purchasing Company D's products are in the public sector and most of them are U.S. buyers. These customers are quite fixed—the company gets the same customers for next 30-50 years, therefore, it is costly to lose customers. The company recently acquired another transportation manufacturing company Z that makes different products. Customers of Company Z are mainly small private entities located all over North America.

Companies Z and D each have one production facility in Winnipeg and keep these operations due to their histories. In addition, Company Z has one and Company D has three plants in the U.S. The primary reason for such expansions is based on the “Buy America Act”. Under this Act, for all U.S. customers that are public agencies, all products they buy from the two companies need to be *Buy America* compliant, which means 60% of the parts must be American-made and the final assembly of the products must take place in the U.S.⁴. Therefore, the U.S. production sites are built to meet such requirements.

Company D is located far away (about 20km) from CentrePort Canada where it will not get any specific benefits from the inland port per se. People working in this company tend to know little about what CentrePort Canada is doing and even take a skeptical attitude on how

⁴ Interviewee 3, November 9, 2016

CentrePort Canada is promoted. One thing that has been sold to Company D is that Winnipeg is such a great central location in North America that it can bring a lot of airfreight in and then distribute it. However, at Company D, materials bought from suppliers always send directly to plants if using air. There is almost no possibility to stop at Winnipeg and drive these materials to final destinations. In addition, CentrePort Canada's transportation advantages have no direct impact on Company D since the company outsources both its inbound trucking and outbound delivery. For other general benefits provided by Winnipeg and the Province of Manitoba, the company should have enjoyed them since it has been situated for a very long time in this city. However, Company D is just located here where the business was started. If the company sets up its business today, Winnipeg will absolutely not be an option largely because of the Buy America legislation. Therefore, for companies that must meet Buy America requirements, Winnipeg is obviously an unattractive place to do business, not to mention CentrePort Canada. The location strategy is associated with the company objective of maintaining or even capturing more U.S. market.

For selecting a site to build a manufacturing operation, the company takes the following factors into consideration. First is the location of customers and benefits that can be obtained from customers for locating in that area. Company D just opened up a new facility in New York in which its current largest buyer supports local business and gives up to 10% price credit based upon the New York content the company has in its products for the buyer⁵. Second is the cost of operation. A cost-effective location is always a concern for business operations. However, energy cost is not considered in Company D's case. The incentives

⁵ Interviewee 3, November 9, 2016

provided by local government are an attraction as well. Third is access to labor. It is critical to ensure that you can get the type of people you need because a suitable workforce facilitates a reasonable cost structure and a good working environment, enabling better performance.

5.3 New companies located in CentrePort Canada (North)

CentrePort Canada has attracted more than 40 companies to develop new operations since it was created. Only 20 are open to the public on CentrePort Canada's website. Among them seven are manufacturers and four of these companies—coded as Company E, F, G, and H—have been interviewed.

5.3.1 Company E

Company E manufactures trucks and equipment for fire protection. It is the largest manufacturer in its market with a variety of products customized to meet every customer's specific need. The company serves cities, towns, and municipalities throughout North America and overseas—e.g. Asia, Central America. However, it is not export-driven primarily due to the currency issue.

The company has always been headquartered in Winnipeg and was separated from another company about eight years ago, when it started to look for land to build a new facility. It bought the current property just before CentrePort Canada was founded. Therefore, it was not attracted directly by the inland port. It is the land per se that attracted the company, which means that Company E may be attracted by the inland port for this specific land if it were to make a location decision now or in the future. First and foremost, the company wants to stay in this area; however, there is not enough available land in the City of Winnipeg. In addition, it is better to be located near the airport because customers fly to the facility about four or

five times per week and staff ferry them back and forth. Further, the company needs a location where there are good logistics services, which means that trucks delivering inbound materials could access the place easily. Last but not least, some of its suppliers are nearby, saving a portion of transportation costs. Therefore, the company chose the current place in Rosser in terms of proximity to the airport, availability of reasonable priced land and suppliers, and availability of logistics services.

Company E has market share coast to coast in Canada so that its central location makes sense. The stable economy and pretty good labor put the company base here as well. The company ships its products out in all four directions directly to customers, to Canadian or U.S. container seaports, and even to the Port of Churchill. It is a big player in northern communities. The trucks are all driven by contract firefighters to Canadian customers because drivers should have professional knowledge and have to do the training at the other end. In such cases, CentrePort Canada Way is very useful to the company since trucks could be driven out quickly, especially heading west. Hence, the company is awaiting the highway extension to Headingley. In addition, employees living on the south end of the city love the highway since it is convenient and efficient for them to go to work.

The Company is both labor- and energy-intensive. It needs a lot of labor, especially highly skilled workers. However, it is difficult to find such people. The company could not benefit from any training incentives outside and it has to do all the training in house. From the utility perspective, the company is self-sufficient because utility services such as water and sewer are not available yet in the whole area. One of the inconvenient things that the inland port will impose on the company is that it has to give up its own water system and

switch to CentrePort Canada's when the ongoing utility construction has been completed.

Company E will have to pay a one-time fee of \$265,000 for hooking up to water, which costs about half of building its own treatment⁶.

5.3.2 Company F

Company F is a local semi-custom furniture manufacturer. It sells products for both residential and commercial use to general contractors and customers in Winnipeg. The location close to customers accords with Weber's least-cost theory that industries such as furniture manufacturing, with weight-gaining production process, are market-oriented. Although the company is far away from raw materials, its suppliers are nearby, making the site cost-effective in terms of both inbound and outbound logistics.

Company F has been in operation for more than 15 years and relocated to the current site three years ago due to business expansion. When selecting a new place to start business, the company looked for a place that was not far away its old location and employees' homes. Finally, the company bought a piece of land in CentrePort Canada North where there is enough land available and the cost of land is attractive.

The company at present only serves local customers by trucking with no rail or air service needed. CentrePort Canada Way can to some extent benefit the company for product delivery or commuting. However, it seems that there are no more benefits for Company F to get from the inland port other than being in the City of Winnipeg.

Company F considers the building process as "kind of painful since the current administration of Rosser and South Interlake are used to dealing with farms and residences,

⁶ Interviewee 4, November 10, 2016

and are out of their league when it comes to commercial development”⁷. In addition, service provision is horrible at the current stage: bus transportation, sewer and water, waste processing and recycling, emergency services, and high-speed telecommunications are all not available. The only service the company gets is snow removal. Company F also found that property taxes would have been cheaper if it stayed in the City of Winnipeg. The immature administration and unavailable services might hinder manufacturing companies based in other cities coming to CentrePort Canada. Therefore, the situation in which new manufacturing operations attracted to the inland port so far are all relocations within Winnipeg can be partly explained.

5.3.3 Company G

Company G is one of the country’s largest manufacturers and distributors of outdoor building products based in Montreal. 85% of its sales go to North America and rest goes to foreign markets such as Asia, Europe, and Australia.

Eighty percent of manufacturing is done in 15 plants in Canada and twenty percent in 3 plants in the U.S. The company owns 18 manufacturing facilities in total. Nearly all Canadian plants are in Alberta, Ontario, and Quebec. Company G also has 30 branches for distribution in Canada and the U.S.

The company has business in every major city in Canada. The facility in Winnipeg is a distribution center. Manitoba is a very big market for the company and the market is growing. Therefore, the company has outgrown its prior regional distribution center in the City of Winnipeg. To expand warehousing in Manitoba to better serve customers in the province and

⁷ Interviewee 8, December 27, 2016

Western Ontario, the company has tried up to two years to turn up another industrial building or piece of land within the city that was big enough to meet its needs. However, its attempt failed. Finally, it bought land in CentrePort Canada North.

For locating a distribution center, factors such as large volume of customers, cost of operation, enough land, as well as accessibility for inbound and outbound transport are considered by Company G. Therefore, Winnipeg and CentrePort Canada have many benefits for the company. According to KPMG's Competitive Alternatives (2016) report, Winnipeg boasts the lowest overall business costs in Western Canada and all the U.S. cities surveyed (See Appendix C). In addition, there is available land in CentrePort Canada for companies of different sizes, good for warehousing and for manufacturing. Further, CentrePort Canada is a strategic logistics location in the northwest part of Winnipeg where it is easy to access the Perimeter Highway through CentrePort Canada Way. There are also many freight companies nearby. The company outsources its outbound truck transportation to these common carriers.

5.3.4 Company H

Company H is an American-based distributor and manufacturer of piping products. Its products have been adopted in various industries such as energy, golf courses, landfill, mining, industrial and power, etc. in Canada, the U.S., Australia, and Chile.

The company manufactures in the U.S. while in other countries, it has either sales offices or distribution centers. It houses its sales office, warehouse and distribution facility in CentrePort Canada North. In addition to the Winnipeg facility, the company has small locations in some major Canadian cities such as Edmonton, Calgary, Vancouver and Toronto.

Company H chose to open a new facility in Winnipeg basically for two reasons. The first

one is geographic. There is a significant customer base in the Manitoba region and Winnipeg is a hub for distribution due to its central location on the continent and good transportation infrastructure. The second reason is economic. The cost of operating a facility is cheaper than the other four cities mentioned above, especially for the real estate cost and labor cost. The company mainly needs a blue-collar workforce and such a labor pool is less expensive in Winnipeg compared to the other four cities mentioned above ⁸. In addition, the property was specifically selected in CentrePort Canada in terms of enough space for warehousing and low cost of the facility.

5.3.5 Discussion

This group actually consists of two different operations in terms of the main business they are focusing on in the facility. Companies E and F are manufacturing companies while Companies G and H are distributors. In fact, only three manufacturing companies have opened their production facilities in CentrePort Canada North. All of them are Winnipeg-based companies, meaning that the inland port so far has failed to attract manufacturing operations from outside Winnipeg. However, CentrePort Canada has attracted outside manufacturers to open distribution centers.

According to these companies, although cost of operation and land space are important under both circumstances, there are some differences on location factors in choosing a production site and a distribution center. For manufacturing, taxes and accessibility for workers are more important. Labor availability is more essential in production than distribution because there are more workers involved, especially highly-skilled workers. For

⁸ Interviewee 7, December 21, 2016

distribution, it is more critical to be near customers and have easy access to transportation.

Therefore, CentrePort Canada North proved to be the best location for all four companies to expand their businesses in Winnipeg.

Land availability and cost of land are common reasons for these companies to locate in the inland port. For Company E, proximity to the airport is another primary reason to locate there. For Companies E and F, their current sites are close to their suppliers. For Companies G and H, the ease of transportation and trucking companies nearby are attractive.

There are both opportunities and challenges for the inland port to manufacturing companies. CentrePort Canada Way benefits Companies E and F in freight delivery because they drive products out by themselves, and for employee accessibility to work. Company E benefits more since it has customers all over the country while Company F mostly serves the local market. However, they have met a lot of problems when developing their sites and have been upset by the services provided in the inland port. There is no experienced administration for commercial development, no bus routes, no sewer and water, no facility for waste or recycling, and no emergency services in the area. As mentioned above, these might be some of the reasons for CentrePort Canada's failure to attract outside manufacturers since these services are essential in production. However, the inland port is still under development and these services could be improved in the near future.

Regarding Companies G and H, the main difference between them lies in that Company G opened its Winnipeg facility before CentrePort Canada started and then relocated to the inland port, while Company H chose to open a new facility in Winnipeg and found that CentrePort Canada attractive when doing so. Therefore, when making a location decision, no

more regional factors have been considered in Company G's case, while Company H was first attracted by the city and then the inland port. The central location, accessibility to very good labor, ease of transportation, and competitive business costs of Winnipeg attracted Company H.

Winnipeg has a very stable economy, fairly low business tax and property tax, stable and educated workers available, and is a good location for shipping outbound and inbound freight. CentrePort Canada has prime industrial land ready for any size of development, along with affordable land price. Three transportation modes (air, rail and truck) and CentrePort Canada Way could meet all logistics needs. The inland port is theoretically a good place for both manufacturing and distributing. However, Winnipeg does not have strong enough incentives for outside manufacturers to set up production businesses⁹. Therefore, CentrePort Canada could help Winnipeg keep its status as a central hub of international trade, but could not alter its economic makeup.

5.4 Cross-case results and discussions

Of the companies investigated above, Companies A to F are Winnipeg-based manufacturers doing production at their local sites, while Companies G and H are manufacturing firms from other cities distributing from Winnipeg.

Obviously, these two types of business operations consider different location factors in determining where to locate. The factors used by these companies are listed in Table 5.

⁹ Interviewee 7, December 21, 2016

Table 5. Location factors used in manufacturing and distributing operations

Manufacturing Facility		Distribution Center
Historical location	City services (e.g. water, sewer, waste processing, etc.)	Large enough customers in the region
Cost of operation	Accessibility for workers	Cost of operation
Taxes and incentives	Proximity to transport infrastructure	Labor availability
Labor availability	Proximity to customers (and benefits get from customers)	Land availability
Land availability	Proximity to suppliers	Ease of transportation

Source: Author

There are fewer factors considered in the distribution category. Significant customer base and competitive cost of operation (especially cost of land and labor) brought Companies G and H to Winnipeg. Although the labor factor is not as essential as in a manufacturing context, companies still need to find an appropriate workforce. Land availability and easy access to highway systems and common carriers are specific reasons to locate in CentrePort Canada.

In all six cases, Companies A to F keep their production sites in Winnipeg due to their histories, with Companies A to C located in CentrePort Canada South, Company D located elsewhere in the city, and Companies E and F located in CentrePort Canada North. These companies tend to locate near their old facility for local expansion or relocation. Cost of operation is the most important economic consideration in location selection. In addition to land and labor costs, manufacturing has more energy costs than distributing. Another factor which manufacturing operations are looking for is taxes and incentives closely related to their

businesses. Incentives include government-supported education and training programs for industries. It is good for improving workers' capabilities and helpful for companies to get the type of labor they want. One of the most crucial factors in determining a specific location is land availability. Companies' requirements on land vary. Some just acquire sufficient land in terms of current capacity while others take future expansion into account. Another land issue is the services provided on the site. Services such as sewer and water are indispensable in production. It will be very inconvenient and costly if such services are not available. For local companies that relocate to a place in which land is only available but without such services, since they want to stay local, they will sacrifice and build systems themselves. However, for companies in other cities looking for places for their new branches, that is definitely not the case. Such unserved areas will not be considered. It is also critical to have good access for employees to get to work. Therefore, companies either prepare enough space for parking lots or choose a location near public transport. In addition, once you get your team to the building, you can have trucks in it¹⁰. It will decrease transport costs to some extent if a location near the often-used transport infrastructure is selected. For weight-gaining production industries (e.g. furniture), it is better to locate near to customers due to cost considerations. However, some companies might expand and open a new branch because they have customers there (such as Company D). Some companies take their suppliers into account when they make a relocation decision. In fact, suppliers are different from raw materials because most raw materials are localized and you can buy them just from where they are. However, you can choose your suppliers. Cost savings could be gained if the company can have suppliers

¹⁰ Interviewee 1, September 26, 2016

nearby. Therefore, when relocating, companies tend to find a place not far from their suppliers in order to maintain relationships. To sum up, location strategies are always associated with company goals.

This thesis evaluates the attractiveness of CentrePort Canada by examining whether the inland port features match the location requirements put forward by companies. The above mentioned location factors are similar in almost all manufacturing operations unless special requirements exist. Therefore, the next step is to explore whether specific CentrePort Canada features match specific location factors.

Winnipeg's central location is good for companies with customers all over the continent and even overseas such as Companies A, B, E, and H. The city's access to all major Canadian container seaports is only useful to companies using them such as Company A, B, and E. Direct access to the Port of Churchill is only used by businesses having customers in northern Canada such as Company E.

Winnipeg is a cost-effective city since it has the lowest overall business costs of major cities in the U.S. & Western Canada, one of the lowest energy costs in North America, competitive wages, and low land cost especially in the CentrePort Canada area. These could help companies maintain competitive cost of operation.

CentrePort Canada has prime industrial land ready for sale or lease for any size of development and is the only place in Winnipeg that has so much available land. In fact, land availability and relatively low land cost are common reasons for companies to locate in the inland port.

Manitoba provides manufacturing industries many related tax credits and incentives

such as low corporate income taxes, generous manufacturing investment tax credits on buildings, machinery and equipment, strong research and development tax credits, and government-funded employee health care costs. Companies love these incentives but they do not all benefit in the same way. For example, Company C has acquired many R & D tax credits while Company E gets none mainly because these credits are only given if you scrap your proto type (Company E sells all its proto types). In addition, companies interviewed know very little about the zero inventory tax, new data processing tax credit, and the U of M intellectual property thing.

There is abundant labor in Winnipeg. For some manufacturers, labor availability is very significant particularly for skilled labor and engineering talent. The government has worker training incentives and immigration recruitment to match industry needs. In addition, CentrePort Canada has partnerships with Red River College and Manitoba Institute of Trades & Technology to help ensure that these two institutions are aware of the types of jobs that economic growth at CentrePort is producing so that their programming can take these into account. While Company C has benefited a lot from these training programs, Companies A and E have difficulties in finding well-trained labor due to the specialty of their businesses. Hence, they depend heavily on their own training programs and have more motivations to maintain their workforce.

Winnipeg and the inland port per se provide plenty of transport infrastructure. CentrePort Canada is North America's largest tri-modal inland port. Although many manufacturing companies have outsourced their logistics, it is still beneficial to some extent. All companies use trucks as their main transportation mode. Companies in CentrePort

Canada, especially in North, can benefit from CentrePort Canada Way by accessing Perimeter Highway very quickly, achieving “5 minutes to 55 mph”. Employees in both south and north areas of the inland port can use CentrePort Canada Way to drive to work, saving time. It is obvious that Companies E to H could have more benefits. In addition, the city has access to CN, CP, BNSF, and the dedicated rail link—Hudson Bay Railway to the Port of Churchill. Company A ships products from rail to container seaports, Companies B and D use a little bit of rail, and Company E only delivers goods to northern Canada by rail. It is evident that these companies show little interest in the common-use rail facility and the new rail park in the inland port. Companies A, B, and D are even unaware of such things. The airport is of significant importance to Company E because it has customers flying back and forth to its facility very frequently. In addition, aerospace companies tend to locate near the airport. For Company D, airfreight is used to receive materials from its suppliers. Companies A, B, and E only use airfreight in emergencies.

For other services, companies show great interest in the foreign trade zone benefits. But at present none of them either use or have enough knowledge about them. The single window helps companies to quickly access these benefits. However, if companies do not use the foreign trade zone, they gain no benefit here. Another thing is the special planning area in CentrePort Canada North for streamlined land-development approvals process. In fact, all companies investigated, especially new companies located in the north of the inland port, developed before the special planning area began operation. Thus, its attractiveness cannot be assessed at present. In addition, the inland port has no public transport and no city services regarded by manufacturers as critical. However, CentrePort Canada is working on the

construction of water and sewer treatment.

To sum up, CentrePort Canada North is unattractive to established companies in CentrePort Canada South which have existed before the inland port started (Companies A to C) and established companies elsewhere in Winnipeg (Company D), because there are no services that these companies need. Therefore, the proposed location factors and inland port features are not matched. However, CentrePort Canada North seems attractive to Winnipeg-based manufacturing relocations and manufacturers outside Winnipeg that want to expand or open a new distribution branch in Winnipeg (Companies E to H) since the inland port features basically match the spatial requirements proposed by companies. In this case, Winnipeg-based companies pay more attention to what the inland port specifically provides, while outside companies put more value on Winnipeg advantages. In addition, CentrePort Canada North is currently unattractive to outside manufacturers to build production facilities due to its inherent characteristics—no strong enough incentives for investment in manufacturing, no services viewed crucial in production operations, and no public transport.

Therefore, Witlox's (2000) matching framework is supported since whether CentrePort Canada, especially the North part, is an attractive location accords with the matching results leveled by companies' location factors and inland port features. In addition, the cases that location alternatives without the "non-compensatory" location factors required by companies, and location alternatives having intrinsic disadvantages to prevent companies investigated from locating at them are regarded as unattractive are verified in this study. Therefore, this thesis advocates a relational approach by integrating behavioral and structural location theories in dealing with a site selection problem or a site attractiveness assessment.

Chapter Six: Conclusion

6.1 Summary

Canada is in the embryo stage of inland port research. All four established Canadian inland ports are constructed in order to boost local economies and attract more trade flows. CentrePort Canada, which opened in 2009, is making every effort to promote its location and services to bring businesses in, especially those in advanced manufacturing, agribusiness and food processing, transportation and logistics, energy and mines, biomedical, and e-commerce. However, it has made little success so far. The inland port footprint has been divided into two parts: the almost established South area and the developing North area. Therefore, this thesis explores the attractiveness of CentrePort Canada, especially CentrePort Canada North, to manufacturing companies. A multiple case study approach involving in-depth semi-structured interviews and secondary data is adopted, with three types of manufacturing firms included: established companies in CentrePort Canada (South), established companies elsewhere in Winnipeg, and new companies located in CentrePort Canada (North). The category of new companies located elsewhere in Winnipeg is excluded due to the difficulty of finding them. Attractiveness is measured in accordance with Witlox's (2000) framework by examining whether CentrePort Canada features match the location factors considered by these companies.

6.2 General discussion

The inland port has a neutral effect on established companies located in CentrePort Canada (South) since it has nothing to do with the growth of these companies. In addition, these companies are currently satisfied with their location and regard CentrePort Canada

North as an unattractive location because there are no services they need there. These companies have already acquired enough land for current development. Cost of operation, labor availability, tax incentives such as R & D and proximity to public transportation have been considered in selecting sites. CentrePort Canada does have access to low business cost, abundant and educated labor, and generous manufacturing and R & D tax credits. However, these are regional advantages provided by Winnipeg or Manitoba which are not unique to the inland port. Proximity to public transportation is a “non-compensatory” location factor for Company A, so CentrePort Canada North’s inaccessibility to bus routes makes it unattractive. CentrePort Canada Way could benefit people working in the inland port but not a lot people in the south part of the inland port use this road. In addition, city services such as sewer and water, recycling, and emergency services that are essential in manufacturing are not available in CentrePort Canada North. To sum up, CentrePort Canada features and the location factors that these companies are looking for are not matched. The primary reason these firms are located in CentrePort Canada South is they started their businesses there, long before 2009.

The situation is similar for companies located elsewhere in Winnipeg and they have even less motivation to move to CentrePort Canada, no matter South or North because there are almost no benefits. However, for companies with plans to relocate in Winnipeg based on business expansion, CentrePort Canada North might be considered an attractive location. CentrePort Canada North has the only big blocks of land available in Winnipeg and affordable land cost so that CentrePort Canada features match the spatial production requirements. Therefore, CentrePort Canada North could be attractive to these companies and they are potential inland port users.

CentrePort Canada North is attractive to new companies located in it because there are some services they need—low business costs, taxes and incentives such as low corporate income taxes and worker training incentives, affordable land, and easy access to the airport and CentrePort Canada Way. CentrePort Canada features and location factors put forward by these companies match. The available prime industrial land and affordable land price are the common reasons for these companies to locate in the inland port. For Winnipeg-based companies to relocate, these two are the predominant determinants. Of course, there might be other requirements. For example, Company E chose its current location partly due to the proximity to the airport. For manufacturing companies from outside Winnipeg, there are only distribution operations so far. As mentioned above, in CentrePort Canada North there are currently no city services which are regarded critical in production. This might be a big obstacle for attracting production operations; especially for those from outside Winnipeg because it will cost companies a lot to build systems themselves. Therefore, they prefer to locate in other places where they do not need to worry about these services. In addition, Winnipeg is historically not a very industrialized city. Companies will not consider Winnipeg when building new manufacturing branches unless the city could offer enough incentives. However, CentrePort Canada North is good for distributing since Winnipeg is a reasonably large market—the largest between Toronto and Calgary, and the inland port has easy access to three transportation modes: truck, air, and rail.

In conclusion, CentrePort Canada North is attractive to Winnipeg-based companies having plans to relocate within the city and outside manufacturers capturing new distributing markets. Regarding Winnipeg-based companies, the available land and low land cost are the

main reasons to bring them to the inland port. CentrePort Canada Way offers benefits for employee commuting and goods distribution. In addition to these three inland port-specific features, outside manufacturers show great interest in regional features such as low business costs, taxes and incentives, the local market, and ease of transportation. For attracting new manufacturing operations, there is much work to do for the government to provide more manufacturing-related incentives and the inland port to improve its services and promote these to outside manufacturing industry. Therefore, although CentrePort Canada could help Winnipeg restore its status as a central hub of international trade, the inland port has failed to do some real transformation for the city.

6.3 Contributions, limitations, and implications for future study

The contributions of this research are twofold. First, it adds to the Canadian research on inland ports. Canadian inland ports have only recently been established, with limited studies available. Therefore, this study provides information on one of the four Canadian inland ports—CentrePort Canada about its operation and attractiveness for different manufacturing companies, and proposes recommendations for attracting outside manufacturing firms. To the author's knowledge, this is the first study discussing Canadian inland port's attractiveness to manufacturing firms. Second, this research takes the initiative to explore CentrePort Canada's attractiveness by investigating whether the inland port features match the location factors considered by manufacturing companies. Adopting Witlox's (2000) framework, specific location factors used by different manufacturers are identified first, and then the inland port features are examined to see if they are matched with the location factors put forward. Such framework is supported since the inland port's attractiveness is in accordance

with the matching results, along with the verification of unattractiveness of CentrePort Canada North's failure to meet the "non-compensatory" location requirements proposed by specific companies and CentrePort Canada North's inherent characteristics preventing outside manufacturing operations from locating in it, thus advocating that a relational approach integrating behavioral and structural location theories should be adopted in addressing a site selection issue or a site attractiveness evaluation.

Admittedly, great efforts have been made in finding suitable manufacturing companies to take part in the project. However, the sample size is small especially for the category of established companies located in elsewhere in Winnipeg. For the other two categories, new and established companies in CentrePort, almost half of the companies have been interviewed. However, there are so many manufacturers located outside CentrePort Canada. Therefore, it is impossible to involve half of those companies in the research in such limited time. In addition, the interviewed company outside CentrePort has "Buy America" requirements, which are not adopted by most other manufacturing firms. Further, it is difficult to identify potential inland port users in manufacturing industry.

Therefore, further study could be conducted to include more companies in all three categories to investigate whether there will be differences in findings. In such circumstances, potential inland port users might be discovered whose perceptions are extremely useful. Research also needs to be conducted outside the Winnipeg area where most potential inland port users come from. It is necessary to know manufacturers outside Winnipeg, their location factors taken into account and their perspective on Winnipeg and CentrePort Canada. For instance, will they put Winnipeg into consideration when making a location decision to open

a new branch in other cities? When making a location decision, regional location is decided before the site selection. If Winnipeg is not a suitable location for their facilities, CentrePort Canada will be definitely rejected. By understanding these manufacturers' requirements, corresponding measures could be taken to keep or increase their possibilities to open new businesses in Winnipeg and CentrePort Canada, specifically.

Still, this is a pioneer study in examining a Canadian inland port's attractiveness from the perspective of manufacturers. It fills the gap by identifying the location factors used by manufacturing firms and matching them with CentrePort Canada features. The thesis shows different inland port attractiveness to three types of manufacturing companies and highlights potential inland port users. However, CentrePort Canada is still mysterious to both researchers and practitioners so that further studies are needed.

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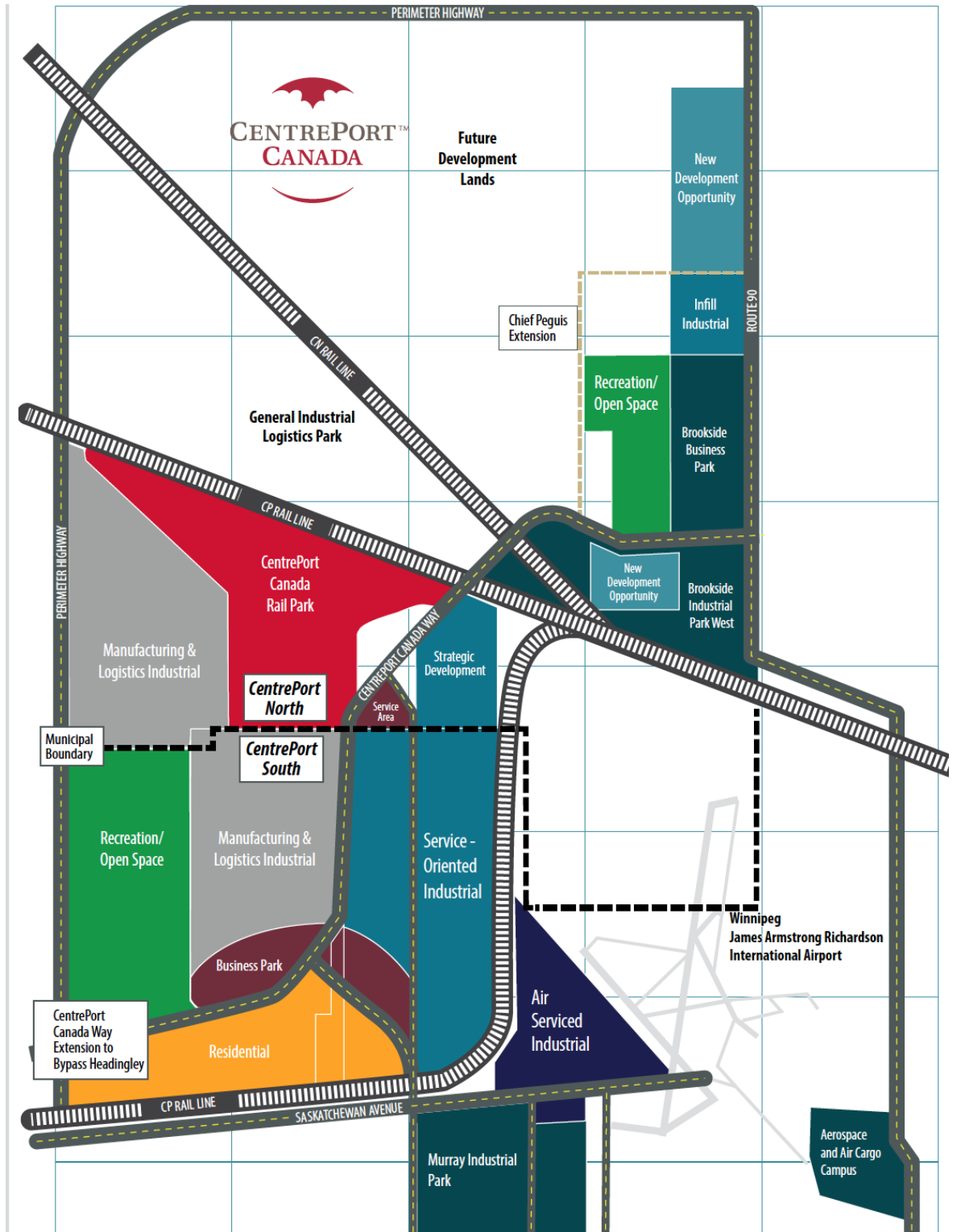
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Appendix A- CentrePort Canada Footprint



Source: CentrePort Canada Annual Report (2016a)

Appendix B- Interview Questions

(1a) For established companies located in CentrePort Canada South:

When and how did you first know about CentrePort Canada? Do you know your company is located in CentrePort Canada's footprint? If so, do you think it is a good thing? After you first know about CPC, have you further learned about it? If so, where have you learned about it?

(1b) For established firms located at elsewhere in Winnipeg:

Do you know CentrePort Canada (e.g. location)? What do you think of it? Have you ever learned about CentrePort? If so, where have you learned about it?

(1c) For new companies located in CentrePort Canada North:

When and how did you first know about CentrePort Canada? Have you been attracted by CPC at that time? After that, have you further learned about it? If so, where have you learned about it?

When did you come to CentrePort Canada? Have you looked at other properties elsewhere in Winnipeg? Why did you choose to locate in Winnipeg and CentrePort Canada? Which points attract you most and why they are impressive?

(2) What kind of benefits can CentrePort Canada bring to you? Do you think CentrePort

Canada is attractive to companies/industries like you? Why?

(3) Are you aware of the following CentrePort Canada features?

Centreport Canada Features	Aware	Unaware
Central location in North America		
Located at the hub of key trade gateways in all four directions		
Access to all major Canadian container ports		
Direct access to North America's only deep water Arctic seaport-Port of Churchill		
Lowest overall business costs of major cities in US Midwest & Western Canada		
One of the lowest energy costs in North America		
Affordable Land Price		
Prime industrial land ready for sale/lease for any size development		
Competitive wages and government-funded employee health care costs		
Low corporate income taxes including 0% small business corporate income tax		
Manufacturing investment tax credits on buildings, machinery and equipment		
Research and development tax credits in Canada		
Worker training incentives and immigration recruitment to match industry needs		
No inventory tax		
New data processing tax credit		
Full access to intellectual property via the U of M, with no royalties until IP is commercialized		
Access to CN Railway		
Access to CP Railway		
Access to BNSF Railway		
International airport providing freight-forwarding services		
"5 minute to 55 mph"		
Plan to double CCW in length to improve connections to the Trans-Canada Highway		
Common-use rail facility and a new Rail Park		
Foreign trade zone single window services access		
Special planning area for streamlined land-development approvals process		

(4) Are the following CentrePort Canada features attractive to your company?

Centreport Canada Features	Attractive	Unattractive
Central location in North America		
Located at the hub of key trade gateways in all four directions		
Access to all major Canadian container ports		
Direct access to North America's only deep water Arctic seaport-Port of Churchill		
Lowest overall business costs of major cities in US Midwest & Western Canada		
One of the lowest energy costs in North America		
Affordable Land Price		
Prime industrial land ready for sale/lease for any size development		
Competitive wages and government-funded employee health care costs		
Low corporate income taxes including 0% small business corporate income tax		
Manufacturing investment tax credits on buildings, machinery and equipment		
Research and development tax credits in Canada		
Worker training incentives and immigration recruitment to match industry needs		
No inventory tax		
New data processing tax credit		
Full access to intellectual property via the U of M, with no royalties until IP is commercialized		
Access to CN Railway		
Access to CP Railway		
Access to BNSF Railway		
International airport providing freight-forwarding services		
"5 minute to 55 mph"		
Plan to double CCW in length to improve connections to the Trans-Canada Highway		
Common-use rail facility and a new Rail Park		
Foreign trade zone single window services access		
Special planning area for streamlined land-development approvals process		

- (5) What activities are performed in your CPC facility (e.g. warehousing, production, administration, etc.)? Do you have other business operations/locations in Winnipeg? If so, where are they and what activities are performed? Any there any differences when making location decisions for different activities? Do you have similar operations in CPC at other Canadian cities or other countries? / Where are your other manufacturing facilities located? Do they share similar location features?
- (6) What factors do you think should be taken into account when making a location decision of an operation like your company? Any personal/non-cost factors?
- (7) For Winnipeg facility, have you ever moved or relocated your company? Do you have thought about expanding the facility? Where to locate?
- (8) Do you think location strategies are associated with firm goals? What are your current company goals?
- (9) Who are your customers (please describe in as much detail as possible)? Where are your (main) customers? What is the market share in different regions? How do you deliver products to your customers?
- (10) Where are your suppliers? How do they deliver products to you? Are you located closer to customers or to suppliers?
- (11) What kinds of people do you employ (by age; education; skill level, etc.)?
- (12) Are you an energy-intensive/labor-intensive company?