LOGISTIC HUBS IN CANADA: NOT EVERY DOORWAY IS A GATEWAY

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Introduction

Well before the economic crisis, the Government of Canada started to work on its Gateway strategy, designed to enhance the fluidity of freight movements and strengthen Canada's position as a trading nation. This initiative has matured in the context of the economic crisis of 2009, which brought local and regional needs for economic development to the fore. As a result, many regional governments have proposed logistic hub projects as a way to both improve Canada's freight transportation system and spur economic development.

Whose interest can be served by the development of a logistic hub, and how? Given existing markets and incentive structures, what must a logistic hub offer to be competitive and commercially viable? What are some of the most common pitfalls for the development of a logistic hub in Canada? In other words, what factors differentiate a successful logistic hub project from a failed one in Canada?

In this paper, the author answers these questions based on his experience working on a series of research projects conducted by CPCS for different stakeholders over the last 2 years, from shippers to development agencies through transportation providers. The strengths and weaknesses of two Canadian logistic hub projects are examined through the lens of these findings. Finally, a brief section outlines the lessons to be learned and how they could apply to a potential logistic hub project in the province of Quebec.

Stakeholders' Incentives

The first step when evaluation the feasibility of a project is to ensure that incentives are well aligned across stakeholder groups. If a group has little to no incentives in seeing the project come to fruition (or worse, negative incentives), particular attention must be given to

aspects of the projects affecting them if the project is to ever come to life. In the context of logistic hubs, the number of stakeholder groups is large, and their incentives rarely well aligned. Table 1 provides a summary of the most common stakeholder groups and their respective incentives when it comes to developing a logistic hub.

Stakeholders' Incentives: Perceived Benefits and Challenges

Perceived Benefits	Perceived Challenges
Governments	
- Additional economic activity - Coherent zoning and planning, associated with lower infrastructure maintenance costs - Reduced congestion and/or environmental impacts - Reduced accidents	- Acquisition of land/rezoning issues - Risks that investment will not generate economic activity - Risk sharing with private sector
Shippers	
- Lower operational costs - Lower set-up costs - Better access to third party or shared services on site	- Will the hub result in a gain in terms of cost / transit time / reliability? - Is the hub's development timetable in sync with their development plans?
3PLs and 4PLs	
- Increase access to transportation services - Lower transport / warehousing costs - Better integration of stakeholders	- Will the hub result in a gain in terms of cost / transit time / reliability? - Is the hub's development timetable in sync with their development plans?
Railway Operators	
- Additional traffic - Consolidation of client traffic - Access to third party services for clients is improved - Better asset utilization	- What are the necessary investments to connect to the hub? - What is the hub's impact on existing networks (e.g. redundancy of intermodal terminal?) - Does it make financial sense to serve the hub?
Trucking Industry	
- Additional traffic - Improvement of drayage operations to support hub	- What is the impact of a hub on the modal split for freight in the region? - Is traffic consolidation likely to

Perceived Benefits	Perceived Challenges
	increase or decrease operational costs? - What are the impacts of the hub on the existing road network?
Real Estate Developers	
- Business opportunity for new DCs/logistic services - Business opportunity for managing the hub	- What is the commercial potential of the hub? - What are the conditions associated to its operation/governance?
Port Authorities/Terminal Operators	
- Anchors current traffic - Additional traffic and additional shipping lines - Better asset utilization (containers move inland)	- What are the costs, if any, to set-up the necessary operations/infrastructure between the port and the hub? - Are these investment justified when benefits are considered?
Shipping Lines	
- Reduced total logistic costs for goods shipped through that trade route - Improved asset utilization (containers) - Increased competition across trade routes	- Are cost differentials large enough to warrant changing trade routes? - Is there a willingness to engage with inland stakeholders to improve container utilization?

Source: CPCS

Table 1 provides only one example of stakeholders' incentives when faced with a new project, and each inland port project will have small variations. Nonetheless, a review of all stakeholders and their incentives is a necessary step in the planning process. Indeed, such a review is critical not only for assessing the feasibility of a project, but also to elaborate an optimal approach to the early planning and implementation stages.

The large majority of decisions to be made concerning the development of an inland port can be assessed from a stakeholders' incentives framework. For example, when it comes to multimodal access to the inland port, most shippers would prefer to have rail service from both mainlines. Governments would also prefer to have direct rail access to minimize drayage and associated congestion and

environmental costs. The incentives for railways to serve a given inland port, however, are not always clear as it may compete with consolidation efforts at their intermodal terminals.

These considerations may affect the type of customers the hub targets (e.g. heavy cargo customers versus consumer goods), may critically affect the choice of its location (e.g. near existing rail terminals or not), and may affect the initial layout of the hub (e.g. securing land for a rail spur or not). Moreover, the assessment of who accrues the most benefits and costs, as it relates to their incentives, can guide the distribution of financial responsibilities for needed investment.

This analysis guides the consultation process, compelling planners to consult with stakeholders they may have taken for granted. In short, it forces planners to ask the hard questions and to provide the necessary answers throughout the planning process, from pre-feasibility to implementation.

Key Criteria for Success

As noted above, a review of incentives can guide the consultation and negotiation process during the project's development phases. At a higher level, however, it is possible to assess the likelihood for success of a logistic hub project by looking at a few key criteria.

Indeed, based on CPCS's recent research efforts and consultations, the success of an inland port relies mainly on its capacity to capture enough traffic and thus generate sufficient agglomeration economies. In turn, to capture sufficient traffic, an inland port must:

1. Be in a location providing logistical benefits (cost, transit time or reliability) for key O/Ds
2. Be anchored to a clear market generator (geographically and modally)
3. Provide excellent multimodal access to shippers (co-location if possible)
4. Provide sufficient land at a competitive price
5. Serve the interest of some key transportation companies

6. Be marketed and/or developed by a motivated, resourceful and knowledgeable organization

Of course, **location** in relation to markets is the first criteria that most potential clients look for when assessing the business case for a new facility in a logistic hub. As such, it is central to the success of a logistic hub.

The presence of a well-defined **market generator** is the second criteria for success. In terms of geography, the population base of the target market (i.e. a market which is well served based on logistical criteria) provides a good proxy if detailed data on freight movement is lacking. In terms of modal market generator, successful logistic hubs tend to be co-located with existing or new major freight infrastructure, such as an airport, a port or an intermodal terminal. Co-location is often considered essential as it helps align stakeholder incentives, provides anchor traffic, and helps define the type of businesses to target in marketing efforts.

While a modal anchor is important, a logistic hub must also provide **quality multimodal connections** to be able to attract sufficient traffic. In particular, an efficient and well developed highway system providing access to regional markets is essential. Locally, efficient access roads to these highways are essential. If possible, the transportation system should also offer streamlined connections to other modal nodes (ports, intermodal terminals and airports). Depending on the market to be served, efficient connections to modal nodes may be more or less important (e.g. particularly important if serving inland rail market for containers received at ports).

While ongoing transportation costs and services, which are correlated to location and multimodal connection, are important, initial set-up costs and potential expansion costs are also significant. As such, **the price of land and the capacity for future expansion** (i.e. availability of land) is crucial. This criterion explains why many logistic hubs are located outside urban areas, and often located in "brownfield" sites (e.g. old military bases in the U.S.).

Transporters play a critical role in making or breaking the success of a logistic hub. Setting up the logistic hub so as to serve the interest of at least a few transporters provides some insurance that service will attain a minimum level. Moreover, by involving transporters early on in the process, the layout of facilities is more likely to reflect their operational needs and to lead to better service and lower costs. This factor is intrinsically linked to location, and once again reinforces the advantages of co-location with existing infrastructure.

Finally, the importance of **governance and marketing**, while intangible, cannot be overstated. New logistic hubs must be developed and marketed actively. In general, involving specialized real estate companies, which are not only motivated, but also more resourceful and knowledgeable than governments, is likely to provide a more aggressive and successful approach. In any case, money must be spent on this aspect of the project, or otherwise expensive infrastructure may well be sold short.

Common Pitfalls

Similarly, our research has shown that there are common pitfalls in the development of successful logistic hubs, in particular when they are led by public authorities. The following two pitfalls were the most common ones encountered by CPCS, and were also most harmful to the successful development of a project:

1. Insufficient consultation, leading to results based on assumptions about commercial and operational business models
2. A value proposition developed in terms of economic development, not logistical benefits

The need for **extensive consultation** is central to the successful development of a project. Using the stakeholder incentive analysis, it is important to survey both existing and prospective stakeholders on the key questions related to their role in the project. For warehouse owners (e.g. shippers): Is their investment cycle in line with the project's timeline? Do they plan to expand their store coverage in the

market area, and if so, what are their criteria for locational decisions? For transporters: Will they serve the logistic hub, and under what conditions? For public and private sector investors: What funding is available, and what are the conditions to be met? For potential site developers: What are their interests, and what decision-making and governance structure do they favor? For indirect stakeholders, e.g. key ports linking to the logistic hub: What is their interest in the project, and what adjustment(s) and/or investment(s) are they ready to make to facilitate the project's success? Of course, extensive consultation with local stakeholders in the affected area(s) are also essential.

Often, the consultation process focuses only on local stakeholders, and takes for granted commercial practices. For example, railways' business model in Canada is moving toward a 'one intermodal terminal per province' structure. In addition, railways now tend to develop business parks alongside their new intermodal terminals, to the extent possible, and to reduce service to clients with a spur. Projects which go against these trends, while assuming that railways will provide service to new sites, are likely to face difficulties. In this particular case, consulting directly with railways on these issues, rather than simply assuming that volumes will drive railways' decisions, is essential.

Another common pitfall is to **develop and market a project mainly based on its economic development potential**, rather than on its fundamental merits in terms of logistical activities. This often leads to decisions which reflect societal goals (e.g. pollution reduction), but may not meet the *sine qua non* commercial conditions for the success of the project. By not focusing on commercial conditions, this approach often disregards fundamental trends, such as new and emerging corridors and changing commercial practices which may need to be taken into account to develop an attractive value proposition.

Case Studies

In this section, we discuss three different logistic hubs projects in Canada. Each project is briefly assessed on the six criteria for success and the two common pitfalls discussed above. The three projects are the following:

1. CN's potential new intermodal terminal and warehousing centre near Calgary, Alberta
2. Centreport Canada anchored by James Armstrong Richardson International Airport in Winnipeg, Manitoba
3. An existing logistic hub in Bécancour, Québec

1. CN's terminal in Calgary

CN plans to invest $100 million to set up a new intermodal terminal and warehousing center in Conrich, northeast of Calgary. Plans for the 680-hectare logistic hub include warehousing space and loading facilities for a wide range of commodities, from automobiles to liquids.[2]

Calgary as a location provides clear logistical benefits. Indeed, for retailers whose outlets are distributed proportionally to population in Western Canadian cities, truck transportation costs are significantly lower from Calgary. Compared to Vancouver, trucking costs are about $250 less each way, and the difference is much larger when compared to Regina and Winnipeg.[3]

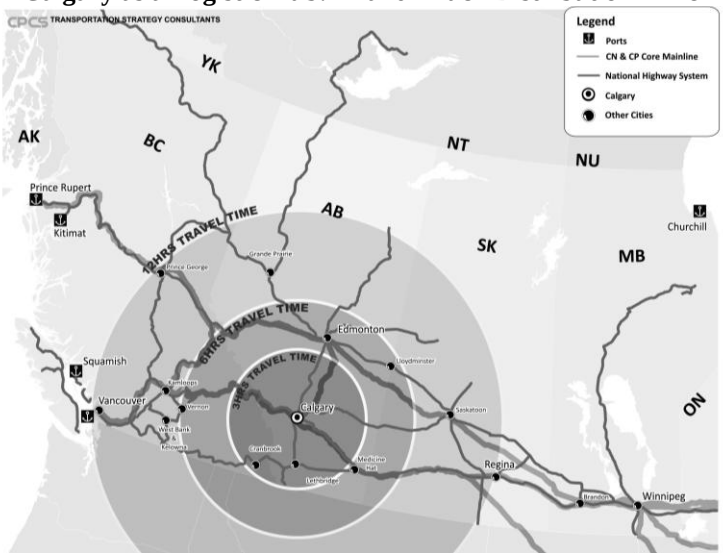
Co-location between the logistics facilities and the intermodal terminal is legitimately expected to generate significant amounts of traffic. Moreover, Western provinces, with a market of roughly 10.5 million people, can certainly support a hub in Calgary.

In terms of multimodal access, the location allows relatively fluid access to the Stoney Trail and the Transcanada Highway, and the hub would be about 10 kilometers from the Calgary Airport.

Moreover, with a site of 680 hectares, including 200 hectares for third party logistic facilities, land availability in the medium term should

not be an issue. Moreover, the location outside the main urban areas provides for lower land prices.

Calgary as a Logistic Hub: Inland Truck Distribution Time



Source: CPCS Transcom

CN is the anchor transporter, and no trucking company seems to be involved. This could constitute a small weakness for the project. Finally, the project is entirely led by private interests, and little information is known about the distribution of roles and responsibilities. The nature of the initiative, being led by the private sector, means that it is less likely to fall into the common pitfalls noted above.

2. CentrePort Canada in Winnipeg[4]

CentrePort Canada is a new 8,000-hectare logistic hub under development, co-located with the James Armstrong Richardson International Airport. Project-related investments are estimated at $460 million, most of it funded by governments.

Winnipeg's locational advantage as a logistic hub to serve North American markets is not obvious when it comes to land modes. Indeed, Calgary is better located to serve Western markets, and the business rationale for goods to stop en-route to U.S. distribution centers remains to be made. For air traffic, in particular for polar air routes, it is better located. It faces strong competition from established hubs, however, such as Anchorage.

The main market generator is expected to be the airport, which anchors the logistic hub. The end market to be served is, once again, unclear, and in business presentations seems to cover everywhere from Western Canada to the U.S. Midwest. It remains to be seen whether or not Centreport can capitalize on these markets. Direct markets, mainly Manitoba, Saskatchewan and North Dakota, represent roughly 3 million people. Minessota, with more than 5 million people, is a potential market but Minneapolis-St.Paul International Airport will provide strong competition.

In terms of multimodal access, the location has good attributes, as it is near the Canadian Pacific Weston Rail intermodal facility, and massive investment in road infrastructure (in particular the new CentrePort Canada Way expressway linking the port to Winnipeg's perimeter highway) has significantly improved its road accessibility.

Land availability and land cost is not an issue given that more than 8,000 hectares are available. At the moment, the project does not benefit from any particular arrangement with transporters which could guarantee a certain level of traffic growth.

A strong point for CentrePort is that significant amounts have been invested in marketing, with the federal government contributing $3.5 million for a single desk marketing window for CentrePort Canada and, in particular, its Foreign Trade Zone (FTZ) status. Moreover, land in the logistic hub is being marketed by private sector developers (e.g. CB Richard Ellis), which will likely leverage investments in marketing made by the CentrePort corporation.

CentrePort was led by public authorities, and whether or not sufficient consultations were done with private stakeholders is not known. It does seem, however, that the business case was heavily focused on economic development, rather than logistical advantages. The focus on the FTZ appears to be a way to compensate the lack of obvious logistical advantages of locating in Winipeg.

Lessons for a future project

In Quebec, the transportation and logistics industry, along with governments and municipalities, have coalesced around the idea of developing a logistic hub in the Greater Montreal area.[5] This project, while still at the early development phase, could benefit from the lessons drawn from other projects. In this section, we focus on some of the key elements that would help a Montreal logistic hub be successful.

First, extensive consultation with stakeholders is essential, to make sure incentives are aligned. This is particularly important given that the project is promoted mainly by public entities. The involvement of the railways and the Port of Montreal early in the process is essential, as they are likely to be most involved in the operation of a potential logistic hub.

The **logistical benefits of Montreal are quite clear** when it comes to serving the Quebec and Eastern Ontario markets. Montreal faces stronger competition for serving the U.S. Midwest market, especially from U.S. ports and hubs. For the southern Ontario market, goods distribution from Toronto often makes most sense. Nonetheless, Quebec and Eastern Ontario, with a population of nearly 10 million people, represent a healthy catchment area.

In addition to a strong population basin, the **logistic hub will require a modal anchor**. In Montreal, the Port and both CN and CP intermodal terminals are located on the island, where land availability and cost are problematic. The airports in St-Hubert or in Mirabel could be options, but the former is quite small and the latter is not well located to serve markets. The same is true for smaller ports such

as Valleyfield. Yet, two potential modal anchors are to be developed near Montreal in the future: **CP's intermodal terminal Les Cèdres and the Port of Montreal's Contrecoeur facilities**. While Les Cèdres is slated to be completed in 2017, no particular schedule is in place for further development at Contrecoeur.[6] The decision to anchor at Les Cèdres or Contrecoeur should be made not only on the respective qualities of each site and the timing of the respective projects, but also based on the preference of potential users (i.e. shippers) and developers (i.e. real estate companies). If a decision were made not to co-locate with one of these two anchors, logistical benefits and traffic attraction potential would be significantly reduced.

In terms of multimodal access, Montreal is well served, in particular on the South shore with the construction of **Autoroute 30**. Rail access is also good, but investment may be required to ensure competitive access by both railways to a potential logistic hub. Congestion on the island may also cause problems for movement between the port and the hub, and potential solutions should be explored. Specific access issues will, of course, depend on the location.

In terms of transportation companies, the choice of site will dictate potential partners. It is worth noting that Les Cèdres would not only benefit from the marketing efforts of CP, but also Consolidated Fastfrate Inc. which will be co-located.

Finally, our research suggests that the logistic hub will require a motivated, resourceful and knowledgeable organization to develop and market it. This means that if a public sector entity is created, it should be ready to devolve marketing and developing control to the private sector in areas where it does not possess a strong expertise. At first glance, the CentrePort development model, with a public management company supported by private real estate developers which drive an important portion of the micro-level marketing efforts, is probably appropriate for a Quebec logistic hub.

The application of these simple criteria for success show that a logistic hub in the Greater Montreal area has great potential if its development process follows the right path, and is able to avoid the common pitfalls of overly catering to economic development objectives rather than providing concrete logistical advantage. Nonetheless, the devil is in the details, and relying on the stakeholders' incentive review throughout the process should help planners better understand the real trade-offs to be made and the risks they embody.

Endnotes

[1] The author would like to thank everyone who participated in the writing of the reports upon which this paper was developed and in particular: Jean-Paul Rodrigue, Marc-André Roy, Don Mcknight, Patrick Morin and Éric Séguin.

[2] See http://www.cn.ca/en/shipping-calgary-logistics-park.htm for more information on the project.

[3] Based on a CPCS analysis using a shortest path analysis, an approximate cost of trucking and estimates about the number of trips per store per year.

[4] See http://www.winnipeginlandport.ca/ for more information on the logistic hub.

[5] See http://lapresseaffaires.cyberpresse.ca/portfolio/portrait-2010/la-vallee-du-haut-saint-laurent/201001/26/01-943132-vers-un-pole-de-transport-et-de-logistique.php for a brief summary of the idea.

[6] At the moment, expansion at Contrecoeur is in the early planning stages, and will be considered only when capacity expansion on the island is not possible. It is estimated that facilities on the island will be able to accommodate 2.0 million containers per year. In 2010, the Port of Montreal handled 1.3 million containers. As such, the future growth rate of the Port will define the schedule. For example, with a 3% growth rate per year, capacity would be reached only in 2025. If the growth rate was 5% per year, the threshold would be reached in 2019.