

Economic Viability of Port Infrastructure Improvements
to Accommodate Post-Panamax Shipping in Halifax

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Abstract

Being the main sea port on the Atlantic coast, the Port of Halifax has been instrumental in the development of Canada. It has allowed goods and products to be acquired in Britain or Europe and shipped throughout the country with the CN and CP rail systems. With Canada's export steadily growing, it allows for the shipping of products worldwide. This paper will attempt to establish if it is economically sound for the Port of Halifax to improve its infrastructures to accommodate the larger Post-Panamax vessels, or if it would be more sensible to let the port continue as a regional port and let other North American ports such as Boston or New York take care of handling the larger ships. Considering the recent improvements at the Halifax Stanfield International Airport, would it be better to continue with the development of our air transportation infrastructures or if future ocean transportation is economically viable for Canada?

Keywords: Post-Panamax, port improvements, Halifax

Economic Viability of Port Improvement in Halifax

The Port of Halifax has had a tremendous impact to the economic development of Canada. Even in the early days of British colonization, Halifax was already an important link with Britain and Europe. Countless immigrants arrived through the now famous and historic Pier 21, and during both World Wars, it is where Canadian troops embarked on their fight to free Europe. Freight and cargo was also important at the onset, equipment and merchandises were easily dispatched to Montreal, Toronto or even the West through the CN and CP rail systems. With the advent of containerization and multi-modal transportation, Halifax opened the first common-user container terminal in Canada more than forty years ago. In 1998, Halifax was the first port in North America's Atlantic coast to welcome a Post-Panamax ship (Frost, 2008). These vessels are so-named because they are too large to travel through the Panama Canal. Their size creates a number of challenges for sea ports. For example, these ships are wider and longer, requiring adequate berths and cranes, they are also higher above water which can be a problem with low bridges. Their drafts are also much deeper and ports that are too shallow would require dredging in order for these ships to travel safely through their channels and harbours. Post-Panamax vessels carry far more sea containers and this also presents each port with the difficulties of storage and transportation connections. Of course, remedies can be found for each problem, but the logistical requirements to address all of these challenges can be quite costly and if the associated expenses outweigh the potential benefits to be gained, it would not be wise to pursue the needed improvement just to keep up with the other ports. It is expected that many ports will not upgrade their infrastructures to accommodate the larger ships, which is why the shipping industry is developing the concept of large port hubs from which smaller "feeder" ships can easily travel to unimproved ports (David & Stewart, 2008). Should Halifax aim to be such a port hub, or would it be more realistic to continue as a regionally fed port?

The Risks

There are two types of risks associated with the question, the risks of investing in the improvements and the risks of not proceeding with it. In the first part, the risks are mostly monetary. For example, considering that one Post-Panamax container crane with a 57 metres outreach cost approximately \$6 million and that four or five of these cranes would be needed to efficiently handle the larger ships, it could easily cost about \$100 million in cranes alone just for the ability to process two vessels simultaneously (Port Reform Toolkit, 2003). What if after spending all that money on infrastructures, shipping companies decide to select another port as their hub? These ships cost several thousands of dollars each day to operate and shipping company will probably consider the shortest possible route to be an advantage. It is not an immediate concern at this time, because Halifax, New York or Boston are, more or less, equally distant from the Mediterranean Sea by which ships from Asia transit using the Suez Canal, Halifax being slightly closer to the Great Circle Route which offers the shortest ocean voyage across the North Atlantic. However the current plans to complete the widening of the Panama Canal by 2015 to allow for larger ships may place Halifax at a disadvantage in the future. Another drawback is Halifax's lack of local market by comparison to its U.S. competitors, its metropolitan population being about 250,000 while New York, for example, exceeds 12 million (Ircha, 2001). On the other hand, the risks of not proceeding with the upgrades are just as alarming, Halifax currently has a fair share of the shipping market, handling about 4% of all East Coast TEU's (Figure 1), yet only a small fraction of which is destined for the local market. Halifax stands to lose most of this market share if relinquished to a regional port. In fact, there are no chances of becoming a hub or even sustain current activity levels unless Halifax invests in upgrades.

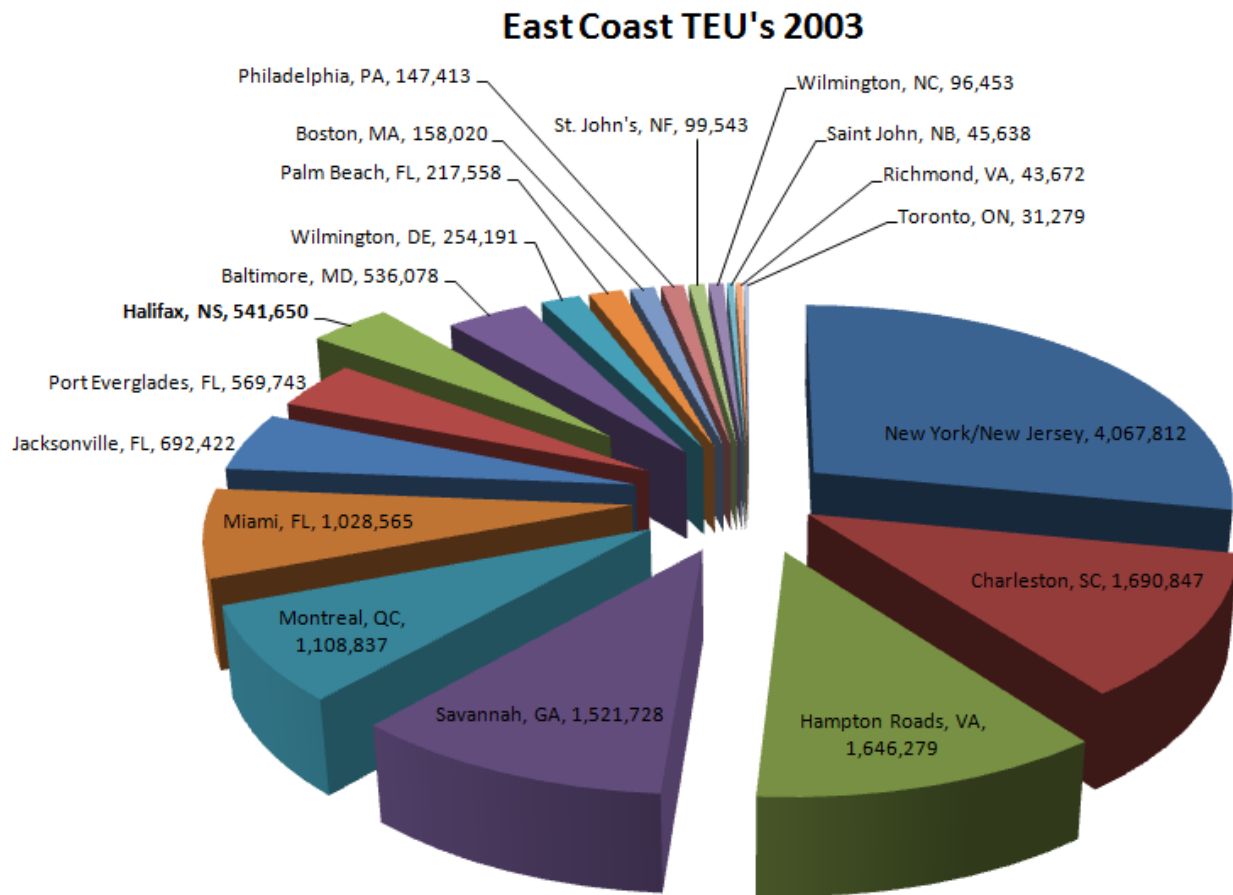


Figure 1
(Data Source: Maloni & Jackson, 2005)

The Benefits

It is probable that not every port will proceed with the upgrade and those that will are going to especially benefit from the market share these ports may be losing. For example, Montreal currently handles a substantial share of the East Coast TEU's, but it is quite distant inland, not an ice free port, and currently impracticable for Post-Panamax vessels because it would require serious dredging of the St. Lawrence Seaway as well as the enlargement of the canals. While studies are currently ongoing to figure out the feasibility of such upgrades, it is highly doubtful that Montreal will be able to accommodate the larger ships in the near future. Halifax has an excellent rail connection with Montreal which is why during the recent labour strike at the Port of Montreal; many ships were being diverted to Halifax (CBC News, 2010).

As such, it is reasonable to expect Halifax to pick up at least part of Montreal's market share should it be unwilling or unable to accept Post-Panamax vessels. Similarly, cargos destined for other inland markets such as Toronto, Detroit or Chicago may also be shipped from Halifax by rail or through smaller feeder vessels. Canada is a trade-dependent nation, and imports are not the only concern here, shipping companies do not wish to run empty ships, they'll want to drop their cargo and pick up new ones. Unlike the United States, Canada has a positive trade balance with its exports value being more than its imports (Figure 2). Improving the infrastructures needed for the larger vessels would benefit the country in that it would provide shipping companies options as to the transportation of these exports. This is especially significant considering that about one tenth of Canada's exports are for the Asian market.

U.S. / Canada Trade Balance Comparison 2004

(in US \$ billions)

Country	Exports	Imports	Trade Balance
United States	818.8	1525.5	-706.7
Canada	316.5	279.8	36.7

Figure 2

(Data Source: David & Stewart, 2008)

The Difficulties

The difficulties facing Halifax in upgrading its infrastructures are actually much less problematic than the other East Coast ports. Halifax is already well-equipped with three berths capable of accommodating Post-Panamax vessels. The purchase of cranes is a common difficulty shared by all ports considering upgrades, and Halifax has already acquired and installed a number of these cranes and plan to add more in the future. Unlike most other East Coast ports, Halifax has one of the world's deepest harbours. Its channel has a main depth of 18 metres (Ircha, 2001), requiring no dredging to accommodate fully loaded Post-Panamax ships.

One of Halifax's two container terminals involves vessels going under two bridges. Even though the bridges clearance is adequate for most Post-Panamax ships to transit under them, the Bridge Commission partnered in the development of a GPS-based system to accurately measure the air gap of the Angus L. MacDonald Bridge and the A. Murray MacKay Bridge. This system has improved the ability of the Port of Halifax to be globally competitive with regards to larger container ships (Halifax-Dartmouth Bridge Commission, 2007). The main difficulties faced, however, are likely Halifax's connection to other markets, such as the lack of a direct double-stack rail link to reach the Eastern U.S. markets. While the CN's intermodal service offers excellent rail connection from Halifax to Central Canada and the U.S. Mid-West. In order to send freight to Boston, for example, it would have to first reach Montreal and then transfer to another connection south involving much delay (Ircha, 2001). This deficiency of a practical rail and road connection to the Eastern U.S. markets is probably one of the main reasons that Maersk/Sealand chose to remain in New York. Lastly, the Port of Halifax being located in an urban area raises the concern that space may be limited for future developments.

Halifax has been a major contender, along with New York and Baltimore for an important contract aimed at serving Maersk's Post-Panamax fleet, and although Halifax was not chosen, its bid served to raise the port's profile as a location with the potential to be use as an important container port (Ircha, 2001). Nevertheless, Halifax has been steadily pushing forward with the ports improvement, in fact, 2007 was a record year for infrastructure investments. Improvements were made by doubling on-dock rail tracks, the creation of a new truck marshalling yard, and the purchase of two new Super-Post-Panamax cranes (Morton, 2009). It would be difficult to argue that improving Halifax's infrastructure is not economically viable, especially when considering the low risks and potential benefits, as well as the small cost involved by comparison to other East Coast ports that require major dredging. While air freight

transportation has been growing which prompted a push to improve airports infrastructure such as those recently made at Halifax Stanfield International Airport, ocean transportation infrastructures should not be neglected. If future mega-sized vessels are to carry in excess of 12,000 TEUs (Ircha, 2001); a port such as Halifax cannot afford to be left without its share of it. Even after a small decline in total cargo for 2008, the Port of Halifax is weathering the storm and looking to the future. According to George Malec from the Halifax Port Authority, when the global economy recovers, there's every reason to expect a return to the kind of growth that was predicted before the recession (Morton, 2009). Is the investment worth it? only time will tell.

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