



PORT-ABILITY: A PRIVATE SECTOR STRATEGY FOR THE PORT OF HALIFAX



**Charles Cirtwill
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RESEARCH REPORT

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Halifax, Nova Scotia

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Atlantic Institute for Market Studies

Where Tomorrow's Public Policy Begins Today

The Atlantic Institute for Market Studies (AIMS) is an independent, non-partisan, social and economic policy think tank based in Halifax. The Institute was founded by a group of Atlantic Canadians to broaden the debate about the realistic options available to build our economy.

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- b) investigating and analysing the full range of options for public and private sector responses to the issues identified and to act as a catalyst for informed debate on those options, with a particular focus on strategies for overcoming Atlantic Canada's economic challenges in terms of regional disparities
- c) communicating the conclusions of its research to a regional and national audience in a clear, non-partisan way
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FOREWORD

Issues affecting Canada's marine imports and exports do not dominate the policy agenda of Transport Canada and the federal government. Despite the essential need for water-borne trade to support Canada's international trade, ports and shipping tend to take a back seat to a continued focus on continental trade. The NAFTA and current FTAA discussions serve to reinforce the continental nature of Canadian trade to the detriment of our ports and shipping services. A result of years of benign neglect is that, despite recent port reform, our major facilities are not yet truly commercial, business-like operations.

During the past couple of years, Canadian ports sought to enhance their cargo throughput in a period of considerable change. Although Canada's port reform of the late 1990s, culminating in the 1998 *Canada Marine Act*, was aimed at further commercializing Canadian ports, the result has been further constraints on their finances and operational abilities. Ports now face added costs with an annual federal levy, increased payments in lieu of taxes to adjacent municipalities, caps on commercial borrowing levels, and restrictions on using land and assets as loan collateral. They are also exposed to new federal regulations, including freedom of information, environmental assessment, bilingualism, and limits on engaging in non marine activities. Governance concerns have been raised as port directors continue to be appointed by the federal government rather than by port users. These many constraints led the Association of Canada Port Authorities to press the Minister of Transport for an early review of the *Canada Marine Act*.

The AIMS study on "Port-Ability: A Private Sector Strategy for the Port of Halifax" addresses a number of these issues from the unique perspective of one of Canada's major container-handling ports. The study focusses on the steps needed to ensure that Halifax emerges as a major container hub port serving eastern and central North America. "Port-Ability" provides a wealth of relevant and informative comparative port and intermodal system data to justify its findings that a strong public private partnership is needed in Halifax. This study makes a timely and useful contribution to the port of Halifax (and others in the marine transportation industry), based on its analysis of best port governance and management practices elsewhere.

Professor Michael C. Ircha, Ph.D.
University of New Brunswick
Fredericton, N.B.
April 18, 2001

EXECUTIVE SUMMARY

As a gateway to North America for world container traffic, the port of Halifax is dying a slow, lingering death. For the past ten years, its share of the North Atlantic market has stagnated, and within a generation, its ranking among world container ports has slipped from 33rd to 90th. Massive investment by Halifax's chief U.S. rivals is now threatening to absorb what little traffic it has left. Halifax faces the very real possibility of being marginalized as a container port. This paper pursues the options available to avoid this decline and concludes that a paradigm shift in thinking about the port of Halifax is needed and that Halifax's "ten-year window" for decisive action has already started to close.

Halifax's stagnant market share has not been created by either competitive factors or industry trends — both of which offer Halifax real opportunities to grow and prosper. The stagnation has, in fact, been caused by a failure to achieve real privatization in port governance. Despite supposed efforts at commercialization of ports in Canada, the federal government retains strict centralized control on ports and port policy. This is a drag on innovation, efficiency, and investment. There is no incentive for port operators to maximize their attractiveness to private partners, and so there is little incentive for global partners to bring Canadian ports like Halifax into their international networks.

Industry trends towards containerization, larger ships, consolidated port operations, and concessions to global operators allow for a straightforward definition of the conditions for success of a modern hub port:

- deep water
- proximity to major ocean shipping routes
- ability to transship goods to smaller vessels for delivery to convenient feeder ports
- access to rail, air, and road distribution networks
- massive private investment
- exclusive arrangements with a global partner

Halifax lacks only the last two, and even these are available to it with appropriate effort. The Halifax Port Authority is not, however, well positioned to seek a bold new private-sector partnership, and there is no longer time for entering into long policy debates at the federal level in an effort to improve this situation. Other elements of the Halifax port community must seek to bring CN Rail and a major global player into a joint venture that will operate a privately run terminal on land not currently controlled by the HPA, in exchange for a long-term concession.

Partnerships and strategic alliances do not appear overnight. Hub terminals take time to plan and build. Put bluntly, Halifax has run out of time to wait — if no decision is made within the next two years, its opportunity to become a North Atlantic hub port will have passed.

ABOUT THE AUTHORS

Charles Cirtwill is the Co-ordinator of Communications and Development for AIMS. Prior to joining AIMS in 2001, Cirtwill was the Policy Analyst for the Metropolitan Halifax Chamber of Commerce from 1997-2000. He has served on the Nova Scotia Municipal Assessment Appeal Court and worked in both the public and private sectors. With a focus on Canadian governmental organization and design, he holds a MPA, LLB and B.A. from Dalhousie University. Cirtwill has researched a broad range of public policy issues including health care, education, taxation, transportation, debt reduction and economic growth

Brian Lee Crowley, a former member of the Editorial Board of *The Globe and Mail*, is the founding president of the Atlantic Institute for Market Studies (AIMS). Prior to joining AIMS, Crowley was president of the Atlantic Provinces Economic Council (APEC), and before that he was a professor teaching politics, economics and philosophy at Dalhousie University. He acted as Secretary to the Nova Scotia Working Committee on the Constitution (the Kierans Committee) after which he became Constitutional Advisor to the government of Nova Scotia in the negotiations resulting in the Charlottetown Accord. He advised the Manitoba government during the Meech Lake negotiations. He has been a diplomat for the EEC Commission, an aid administrator for the UN in Africa and an advisor to the Quebec government on parliamentary and electoral reform. He holds degrees from McGill University and the London School of Economics, including a Ph.D. in Political Economy from the latter. He appears regularly in the media to comment on economic and political matters.

Jim Frost was born in Montreal and has a BA in History from McGill and an MA in Business History from Queen's. From 1980-87 Frost was Director of Marketing with the Halifax-Dartmouth Port Development Commission, and from 1987-88 he was Vice President of UM Holding Ltd., which operated a feeder service between Halifax and Boston. Since 1995 he has been a self-employed marine transportation consultant with his own firm, MariNova Consulting Ltd. As well as his ongoing consulting work, he is currently enrolled in the Executive MBA program at St. Mary's and is finishing a commissioned biography about the Stairs family of Halifax, from approximately 1770-1975, which he hopes to have published next year by a major Canadian academic press.

SECTION 1

INTRODUCTION

While the appearance of two post-panamax cranes on the Halifax waterfront in 2000 gives the appearance of growth locally, Halifax is rapidly slipping down the ranks of world ports because other ports are growing at significantly faster rates. The shipping industry has embraced a “hub-and-spoke” system, in which large ships call on a few deep-water, high-volume ports to transship their goods to smaller vessels or alternative transportation modes for further distribution. This trend will see far more losers than winners, as ports jockey to be the hub in their region. Halifax must choose between

- accepting a role as a regional gateway port, seeing its market share of international containerized trade decline, and focussing its efforts instead on increasing port operations relating to cruise ships, offshore support vessels, pleasure craft, auto carriers, shipbuilding, and national defense
- aggressively pursuing growth in all areas of port operations, including the vast potential of becoming a North Atlantic hub port and significantly increasing its market share of containerized cargo and its economic impact on Canada and the Atlantic region

This paper will pursue the second option and explore the avenues available for resuscitating Halifax as a major container port, taking into account competitive pressures, industry trends, and comparative port development around the globe.

Background: The Port of Halifax

In 1999, Halifax handled 462,766 TEUs (twenty-foot equivalent units — a standard measure of container traffic) and ranked between Livorno, Italy, and Dublin, Eire, among world container ports. In contrast, the number-one port in the world, Singapore, moved 15.9 million TEUs, dwarfing even Halifax’s principal east-coast rivals, New York, ranked 13th (2.8 million TEUs) and Norfolk, ranked 34th (1.3 million). Among Canadian ports, Vancouver is ranked 49th (1.1 million) and Montreal is 54th (1.0 million).

As Canada’s third busiest container port, the port of Halifax remains a significant economic engine for Atlantic Canada. It is responsible for an estimated annual economic impact of C\$305 million in expenditures and C\$520 million in incomes earned, with over 7,750 jobs tied to port activities. The port is of great interest to a broad range of public and private stakeholders who are either involved in or affected by its operations. (Appendix A gives a brief outline of some of the key players and the basis for their (sometimes conflicting) visions for the port.)



More than 20 international shipping lines call at Halifax. In 1998, the port handled more than 13 million tonnes of cargo, with container traffic accounting for about 3.5 million tonnes (27 per cent) of this total. Port traffic was up four per cent in 1999, while container tonnage was up eight per cent, over the previous year.

One would be hard pressed to find a community in Atlantic Canada which is not in some way affected by what happens in the port of Halifax. Some of this region's cargoes that are transported by container (and destinations) are

- blueberries (Japan, Germany)
- apples (United Kingdom)
- seafood (Europe, Caribbean, Far East)
- french fries (Europe, Far East, Australia)
- flour (Iceland)
- peat moss (Far East)
- lumber (Europe, Middle East, Far East)
- newsprint (United States, Europe, Far East)
- tires (Europe, Far East, United States)

In addition, many export industries and importers in other parts of North America would be in a bind without the multitude of services that can be accessed through the port of Halifax. The port has three main hinterlands: the Maritime provinces, central Canada, and the U.S. mid-west. It also serves both Newfoundland and New England via feeder vessels. Very little port-related manufacturing or distribution activity actually takes place near the city of Halifax; 80 per cent of the cargo handled in the port originates in or is destined for somewhere else.

Background: Previous Studies of the Port

Several studies of the port have been conducted over the past decade (three of the more recent are summarized in Appendix B). The conclusions and recommendations of these studies have fallen into a consistent pattern. The risks commonly identified and the solutions normally offered include:

Risks:

- lack of a cohesive and strategic management structure
- continued share loss to Montreal as new carriers arrive in that port and others expand service
- New York dredging to increase harbour depth from 40 to 45 feet by 2003
- improvements in U.S. rail efficiency
- an expected repeal of the U.S. Harbor Tax, which would threaten U.S. cargo shipped via Halifax to avoid the tax

Recommendations:

- move forward with unified leadership and cohesive management
- ease capacity constraints
- improve labour efficiencies and reduce costs
- improve rail efficiencies and reduce costs
- develop a more co-ordinated and focussed approach to marketing

The other common thread among these studies has been the assumption that the lead role for growth and development rests with the federal agency responsible for port governance in Halifax. Given the global trend towards port privatization and the numerous comparative models now available, this is an assumption that this paper will explore — and challenge — more fully.

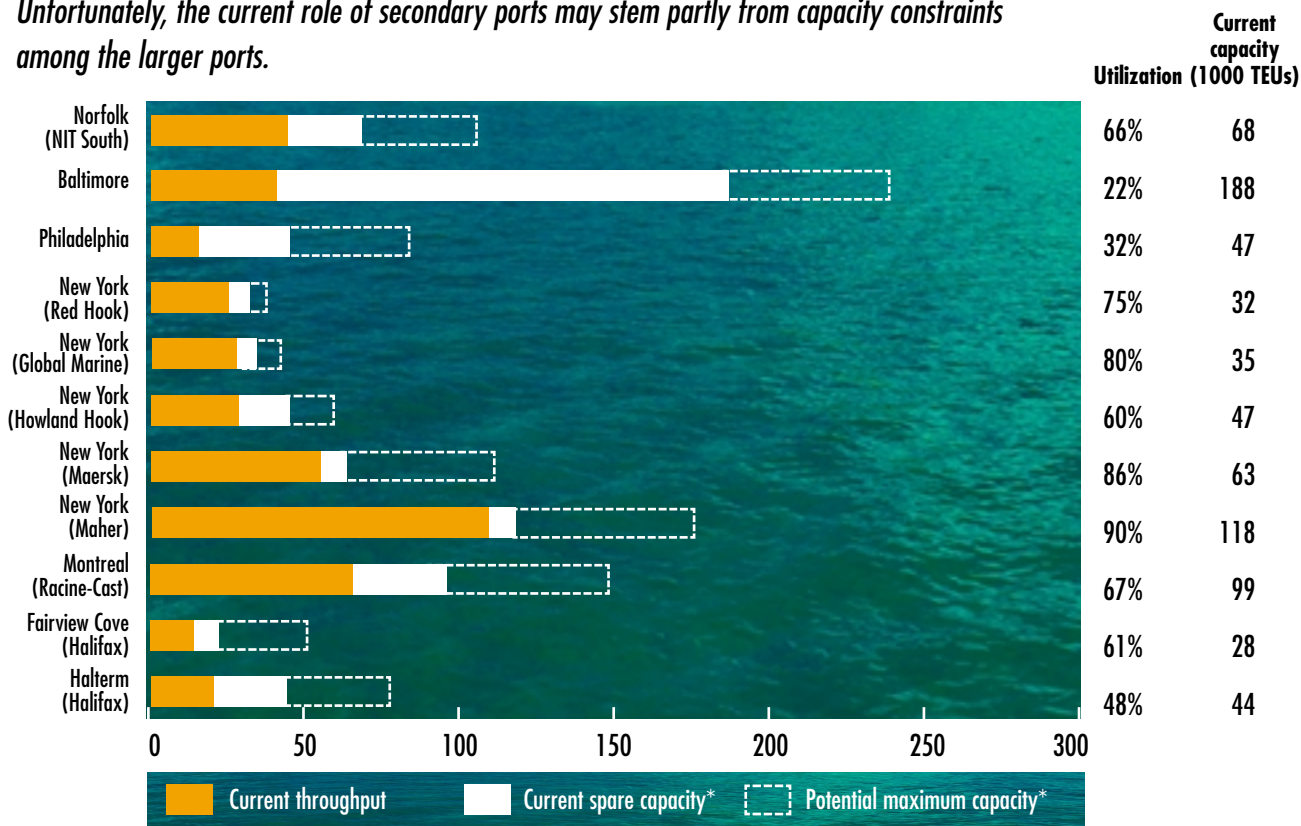
Background: Temporary Advantages

It is part of the mantra of Halifax's boosters that, because of its geographic location, the port should be a hub, a gateway to North America, the centrepiece of a North American distribution network fanning out across the continent by ship, rail, and truck. In fact, the shaky hold the port still maintains on a limited version of that attractive vision is due solely to two factors that are present in competing ports like New York/New Jersey but are both strictly temporary and beyond Halifax's control: lack of capacity and lack of water deep enough to accommodate post-panamax ships. As the graph below demonstrates, many of New York/New Jersey's terminals are operating at or near capacity, while Halifax's two terminals have significant capacity currently available. However, New York/New Jersey does have the potential for growth and "[US]\$3.7 billion in port improvement projects on its drawing board, ranging from dredging to terminal construction. It plans to spend [US]\$1.8 billion in the next five years alone" (Dupin 2001).



Capacity Constraints Monthly Capacity and Average Utilization (1999)

Unfortunately, the current role of secondary ports may stem partly from capacity constraints among the larger ports.



* Assumes equal proportion of 20' and 40' containers; potential capacity based on one crane per 120 metres of quay and 77700 containers per crane per year; actual capacity based on current installed cranes and current productivity in relation to Norfolk. Norfolk has recently doubled its capacity after the opening of NIT North.

Source: World Container Terminals Report, Competitor Calls, Ports Websites

As a result of New York's current problems, Halifax has been able to use its position as a first-in, last-out (FILO) port to gain business from shipping lines wanting to lighten ships headed for New York and its shallower draft, or to top up the loads of ships on their way from New York to northern Europe, the Mediterranean, or southeast Asia. In 2000, Halifax moved well over 500,000 TEUs for the first time in its history and saw a 21 per cent increase in container traffic from the year before — numbers that sound positive but mask a disturbing reality, which will be discussed in the next section.

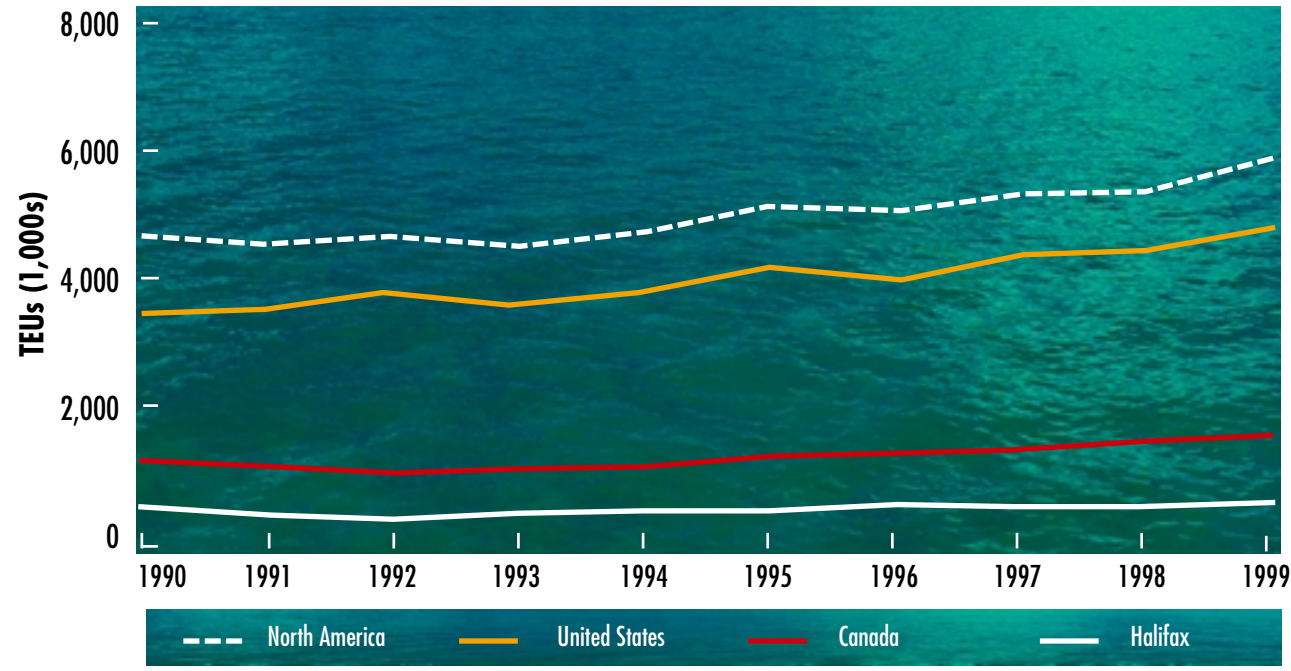
It is generally accepted within the industry that these advantages are temporary and will last at best ten years, and may be gone in as few as five. At that point, the approaches to New York will have been dredged to post-panamax depths and more capacity (rail, terminal, and channel capacity) will have been added, and, without aggressive action to seize more market share, Halifax will be relegated to the status of a regional gateway port, supplying mostly local cargo.

SECTION 2

CRISIS: HALIFAX IS STAGNANT

Despite recent increases in container tonnage, Halifax is not keeping pace with its sister ports in Canada. Halifax’s traffic increased three per cent between 1990 and 1999 in an industry growing globally at 7 - 8 per cent per annum. In comparison, Montreal’s container traffic grew 73 per cent over the same period, and Vancouver’s surged over 200 per cent! In fact, Halifax’s growth has “flat-lined” while the market it serves has continued to grow.

Halifax Flat Lines While North Atlantic Container Traffic Grows (1990-1999)



Source: AAPA Data, North Atlantic traffic is calculated using statistics for all Canadian and US east coast ports north of Wilmington, NC



Between 1990 and 1999, traffic through North Atlantic container ports — between St. John's and Wilmington, North Carolina — rose 47 per cent, from 4.7 million TEUs in 1990 to almost 7 million in 1999 (see Appendix C for detailed tables of volume and market share for these U.S. and Canadian ports). During this period, the majority of U.S. and Canadian North Atlantic ports saw volume increases of over 50 per cent (Philadelphia increased its volume by 232 per cent), yet Halifax's volume has gone up only three per cent over the decade. At the same time, Halifax's market share has been essentially frozen at seven per cent for almost ten years, while ports like Montreal and Norfolk have seen an average one per cent increase in their market share every three years since 1990.

Halifax's failure to grow is a critical concern and raises the issue of why Halifax is being left behind in the international marketplace. The following sections will consider three possible explanations:

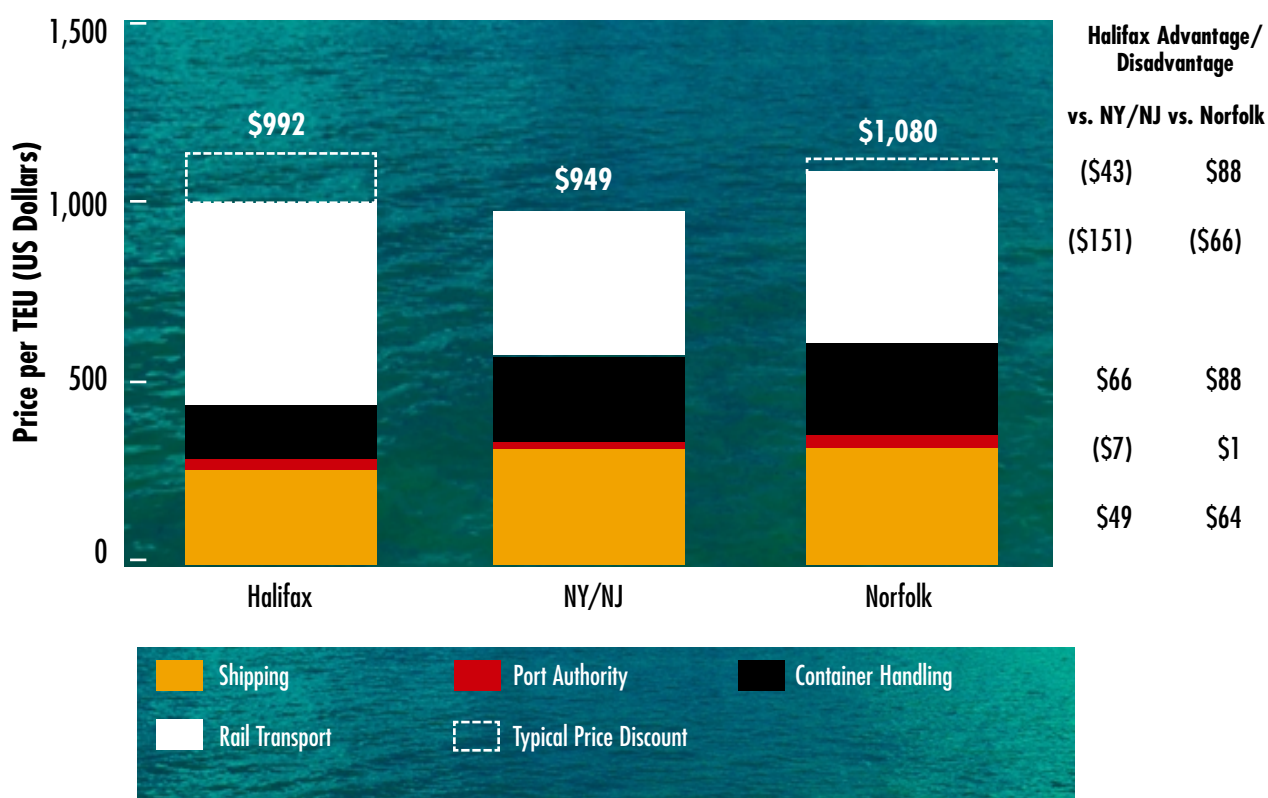
- time, distance, or cost disadvantages
- failure to keep up with industry trends
- inefficient or ineffective port governance

Stagnation Hypothesis #1: Time, Distance, and Cost Disadvantages

Time, distance, and cost are the three major factors in decision making for shipping lines. Of the three, cost is paramount. Halifax currently suffers a cost disadvantage in relation to New York in shipping to Chicago, the only U.S. market area in which goods shipped via Halifax have any significant market share. This disadvantage is not insurmountable, however, and Halifax is already moving ahead of other U.S. competitors.

Halifax Market Opportunity Container Transport Cost Comparison (Felixstowe, UK to Chicago)

Transporting through the Port of Halifax to Chicago is cost competitive with transporting through the Port of NY/NJ.



Notes: Rail rates quoted from CN and Norfolk Southern; shipping prices estimated at \$0.08 USD per TEU-Mile; Total based on shipping line price, not list price; \$1 USD = \$1.52 CDN

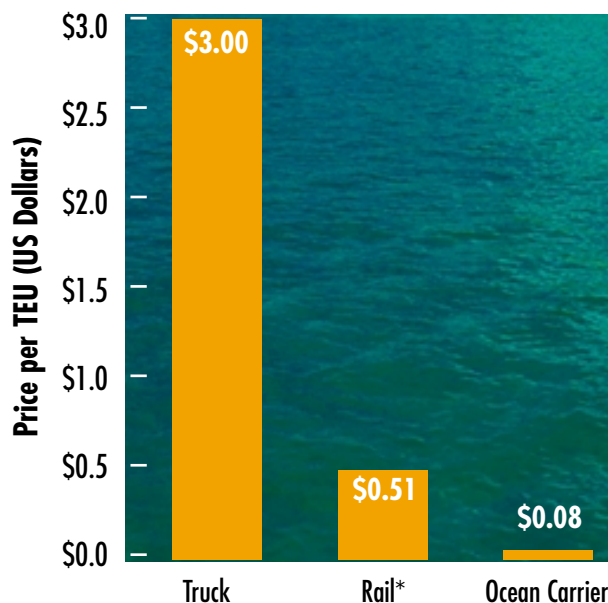
Source: Halifax Port Authority; World Container Terminals Report; "Atlantic Institute" Report; Rail companies

It is significant to note that over 50 per cent of the cost of shipping through Halifax is for rail transportation. As can be seen in the chart below, rail transport is currently almost six times as expensive as shipping by sea. Thus, Halifax’s advantage of being closer than New York to Europe by sea is negated by it being farther from Chicago by rail, the more expensive mode of carrying goods. As is also demonstrated below, however, CN Rail partially compensates for this disadvantage by aggressive pricing on this route. It will need to continue to seek rail efficiencies and cost savings to sustain and expand its current pricing advantage.

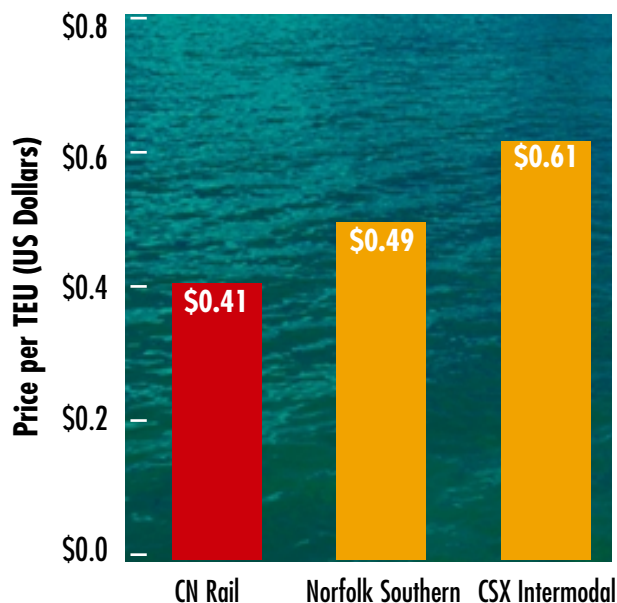
Halifax Market Opportunity
Movement Price per TEU-Mile (Excludes In-Transit Inventory Holding Cost of Cargo)

Rail is typically six times as expensive as ocean carrier. Halifax’s competitive disadvantage is currently mitigated by aggressive pricing by CN on a per TEU-Mile basis

Modal Economics



Relative Rail Prices (Atlantic Coast to Chicago)



* Rail price per TEU-mile is based on Halifax to Chicago route

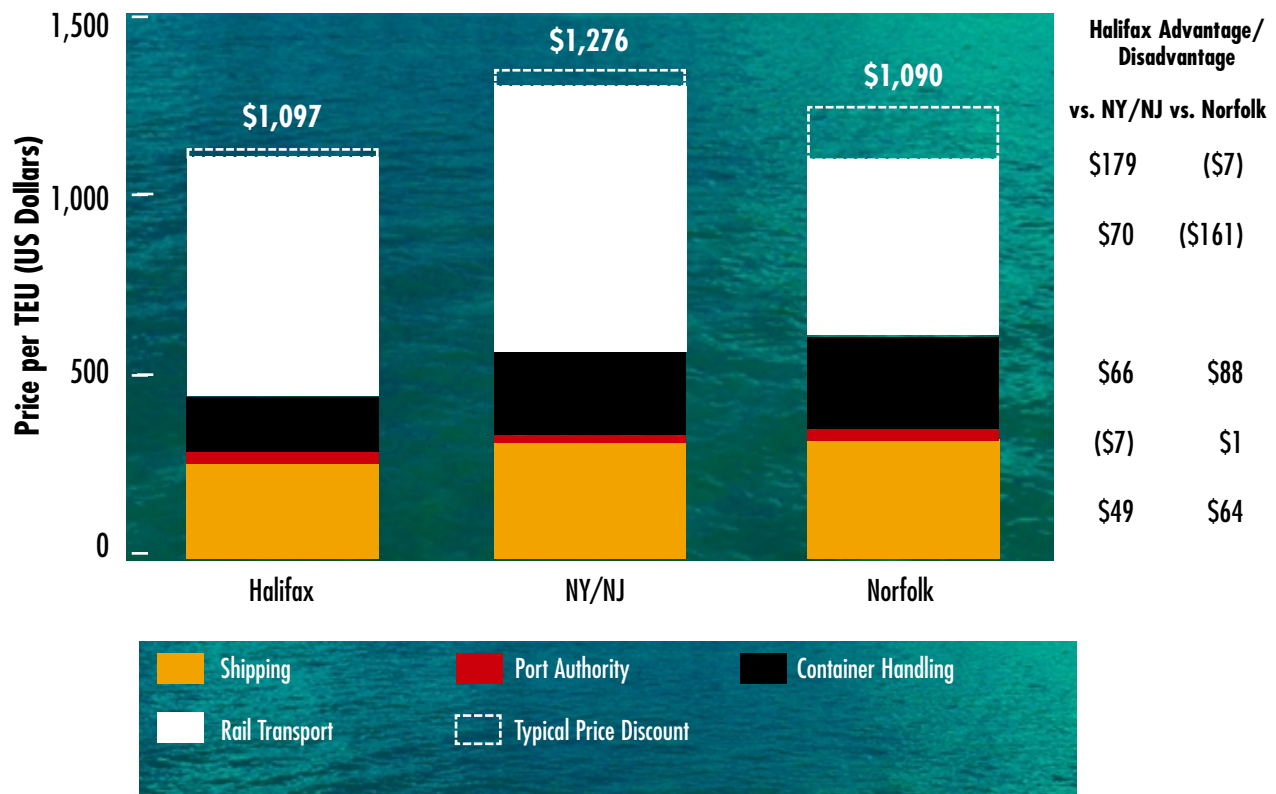
Notes: Shipping Container Price per TEU-Mile derived from weighted average of current distribution of vessels by class worldwide

Source: "Maritime Economics" (Stopford), Rail Companies, Trucking Companies

This rail disadvantage is less significant when considering other origins and destinations for North Atlantic container traffic. For example, it is not well known that Halifax has a significant price advantage over New York for goods shipped to Memphis, Tenn., and remains competitive with Norfolk, Va., in that market.

Halifax Market Opportunity Container Transport Cost Comparison (Felixstowe, UK to Memphis)

The cost of transporting through the Port of Halifax to Memphis is currently very cost competitive with the closer Port of Norfolk.



U.K. to Port:	3,074 miles	3,693 miles	3,915 miles
Port to Memphis:	1,971 miles	1,095 miles	915 miles
Total Distance:	5,045 miles	4,788 miles	4,830 miles

Notes: Totals based on shipping line price, not list price; shipping prices based \$0.08 USD per TEU-Mile; Port Authority charges include inventory holding and fixed ship costs; exchange rate \$1 USD = \$1.52 CDN; rail rates derived from quotes from CN and Norfolk Southern.

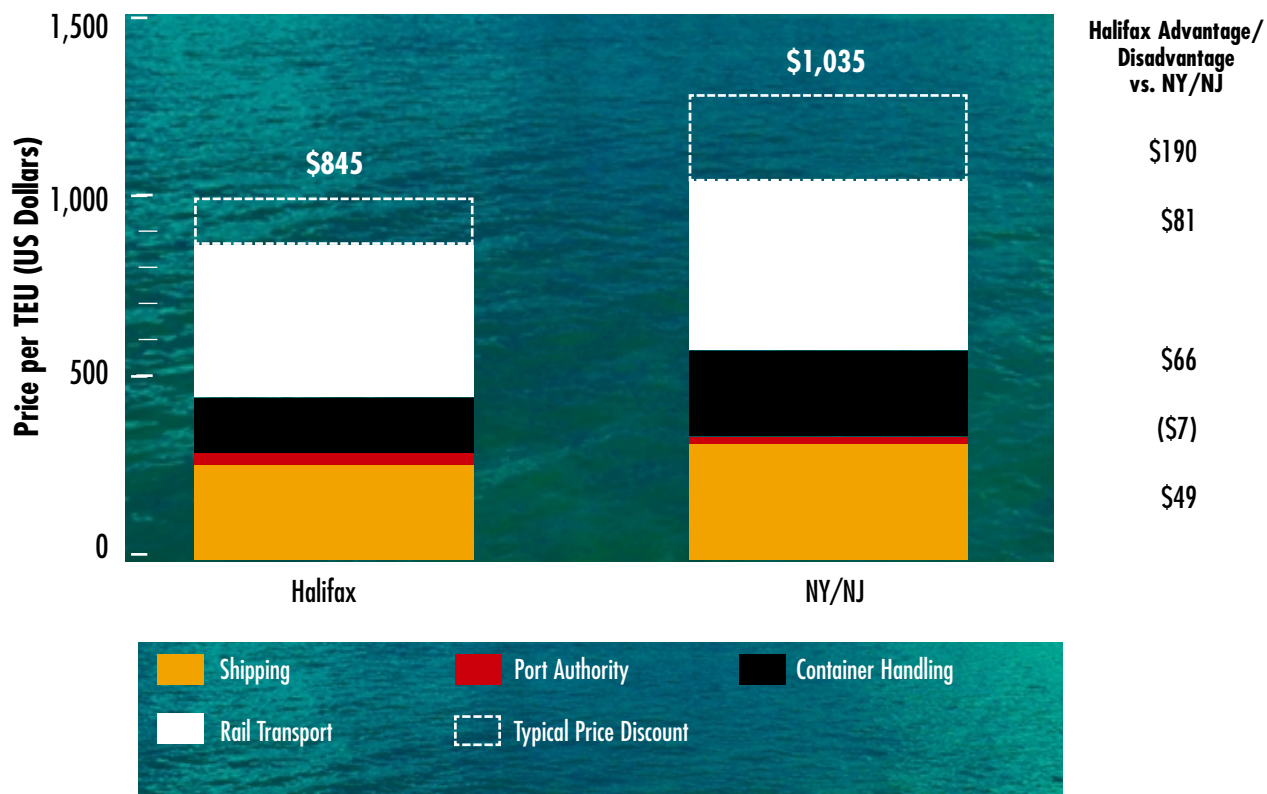
Source: Halifax Port Authority; World Container Terminals Report; "Atlantic Institute" Report; Rail companies



Shipping via Halifax also offers a substantial cost advantage for the Canadian marketplace, representing a 20 per cent saving over New York/New Jersey to Toronto, for example. This advantage may prove important as more Canadian-bound cargo moves on to ships too large to be accommodated in the St. Lawrence River and the port of Montreal.

Halifax Market Opportunity Container Transport Cost Comparison (Felixstowe, UK to Toronto)

It cost 20% less to transport a shipping container from Halifax to Toronto than NY/NJ.



U.K. to Port:	3,074 miles	3,693 miles
Port to Toronto:	1,091 miles	488 miles
Total Distance:	4,165 miles	4,181 miles

Notes: Totals based on shipping line price, not list price; shipping rates based \$0.08 USD per TEU-Mile; Port Authority charges include inventory holding and fixed ship costs; exchange rate \$1 USD = \$1.52 CDN; rail rates derived from quotes from CN and Norfolk Southern; NY/NJ to Toronto list price derived from NY/NJ to Detroit (NS) and Detroit to Toronto (CN)

Source: Halifax Port Authority; World Container Terminals Report; "Atlantic Institute" Report; Rail companies

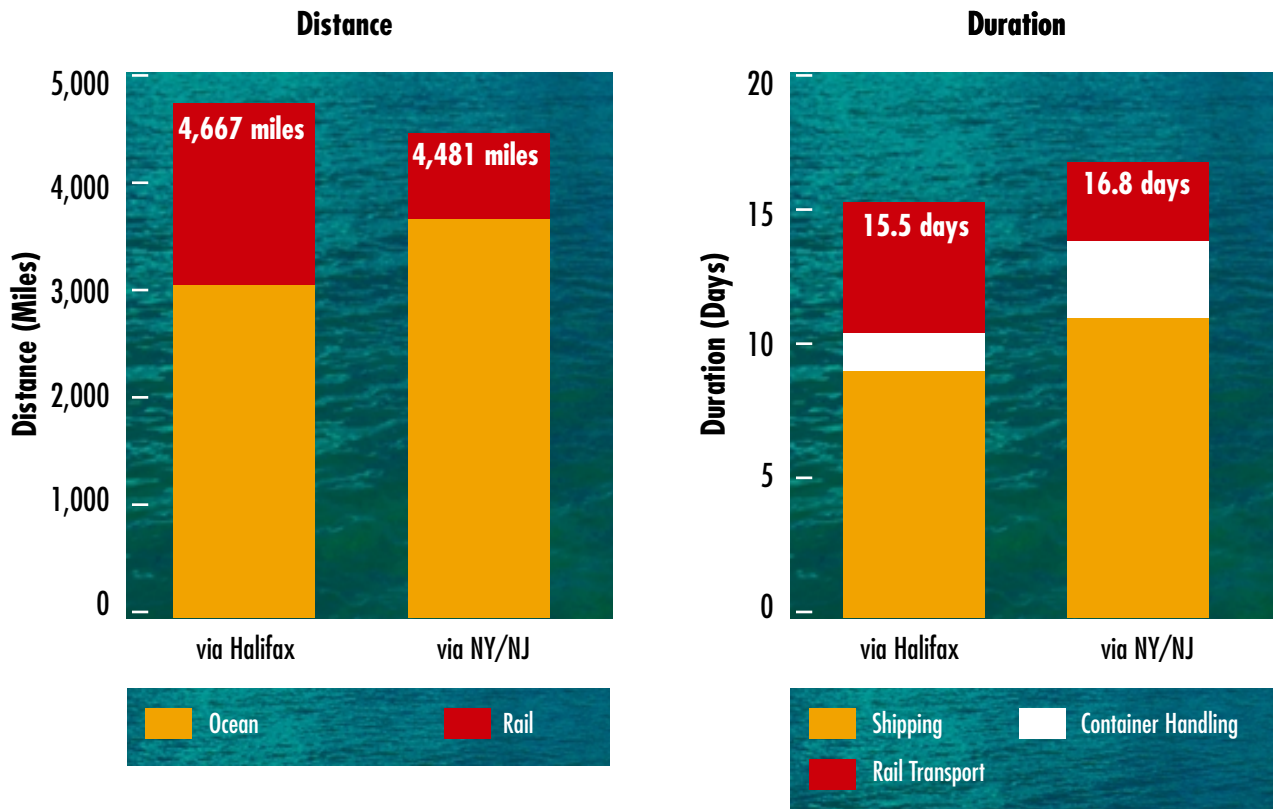
CN's current rail network and price structures offer Halifax some strong competitive opportunities in the central and southern United States, in Canada, and into Mexico. One of the key questions raised

about Halifax’s bid for the Maersk Sealand superterminal, however, was the level of direct service into the northeastern and eastern United States, more specifically the major marketplace of the tri-state area. The relationship with Burlington Northern and renewed talk about a merger with CP indicate that market pressures are working to keep CN interested in addressing this gap.

Halifax’s geographic location does supply it with a distinct time advantage over its competitors. As can be seen below, while shipping from the port of Felixstowe, England, to Chicago through New York offers a distance advantage of 186 miles (298 kilometers), goods shipped through Halifax get to Chicago 1.3 days (about 32 hours) sooner. This time advantage is again, temporary, as it is founded on the differences in container handling time caused by the congestion at New York/New Jersey, a difference that will be eliminated as that port brings its capacity improvements online. Moreover, the majority of container traffic is far more price sensitive than it is time sensitive.

Halifax Market Opportunity Comparison of Distance and Time for Container Shipped (Felixstowe, UK to Chicago)

The route to Chicago via Halifax requires 800 more rail miles than via NY/NJ. It requires less time because of congestion at NY/NJ.



Note: Destination point is Chicago, IL; Container handling time is an average of the time required to unload a 4000 TEU vessel and a 2750 TEU vessel; 3 days at NY/NJ port due to congestion.

Source: Calls to Rail Companies, Shipping Lines and Container Terminal Operators

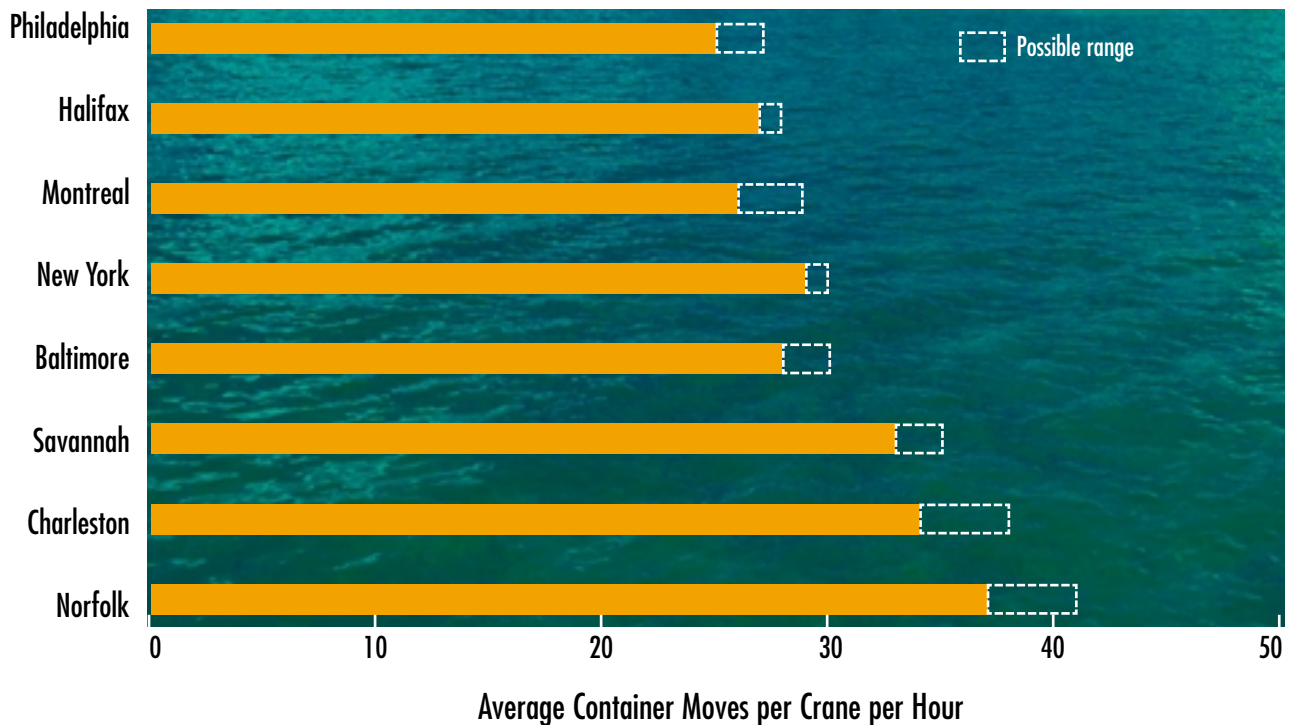


Halifax’s current advantages lie in the areas of ocean shipping and container handling. Superiority in ocean shipping time is a function of distance and geography, which will always favour Halifax on the North Atlantic route. It should be noted, however, that the average speed of container ships is now 20–22 knots, whereas the average speed of freight trains is 21 km/h (roughly equivalent to 11.5 knots) (Bain & Company 2000). Improvements in rail speed will accrue to Halifax’s competitive advantage and can be complemented by increases in efficiency at dockside.

The graph below highlights one area for improvement on current performance. Halifax sits well back in the pack in terms of how quickly and efficiently it handles customers’ cargo. This is important because container throughput is the main determinant of an ocean carrier’s port time, which is a major cost factor in port selection.

Relative Port Performance Throughput per Crane

Throughput is the main driver of ocean carriers’ port-time. Halifax is not well positioned relative to its major competitors.



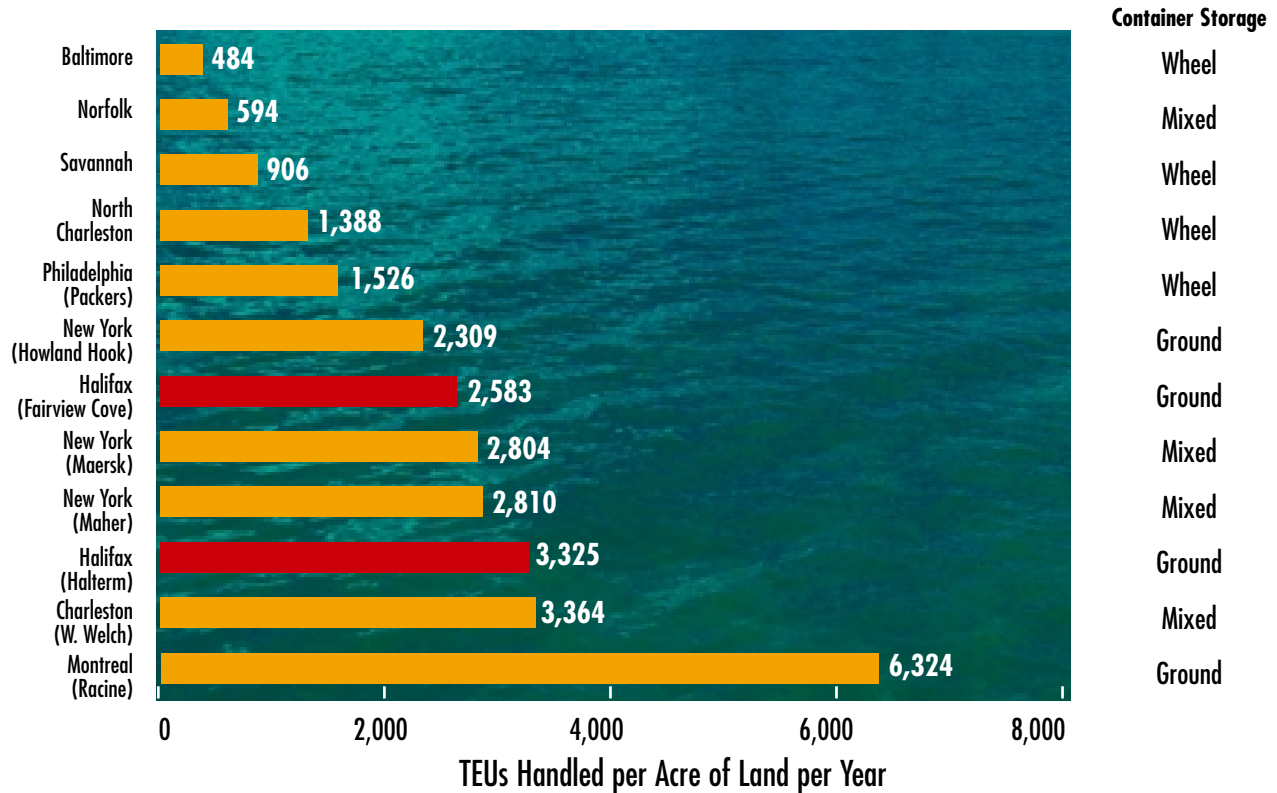
Note: Averages are normalized for ship size and exchange rate and assume a 2800 TEU ship and an 80% exchange rate or more

Source: Competitor Calls

However, as the next graph shows, the port does handle its container yards well.

Relative Port Performance Land Productivity

On a positive note, Halifax terminals demonstrate above-average efficiency in managing their container yards.



The port of Montreal’s apparent outstanding efficiency derives from the fact that it is the final destination for small, “handy” size ships that are entirely unloaded straight onto trains. A container thus has to be handled fewer times at Montreal than at the other ports on the chart.

Source: Port Websites, Competitor Calls

For centuries, Halifax has touted its natural advantages as a port: deep water, ice-free in winter, and central location on the great-circle route between Europe and North America. However, the higher cost of rail versus ocean transport means that, other things being equal, Halifax’s geographic location is, in fact, a competitive disadvantage. Nevertheless, Halifax can achieve cost and time competitiveness with its major east-coast rival, New York/New Jersey, on traffic moving to and from the U.S. Midwest and specifically to market and distribution centres, including Chicago, Memphis, and Toronto. Cost and time advantages created by rail and terminal efficiencies give Halifax a modest edge, an edge that can be readily increased by further improvements and expanded volumes.

In short, time, distance, and cost factors cannot explain the current stagnation in container traffic through the port of Halifax.



Stagnation Hypothesis #2: Industry Trends Are Working Against Halifax

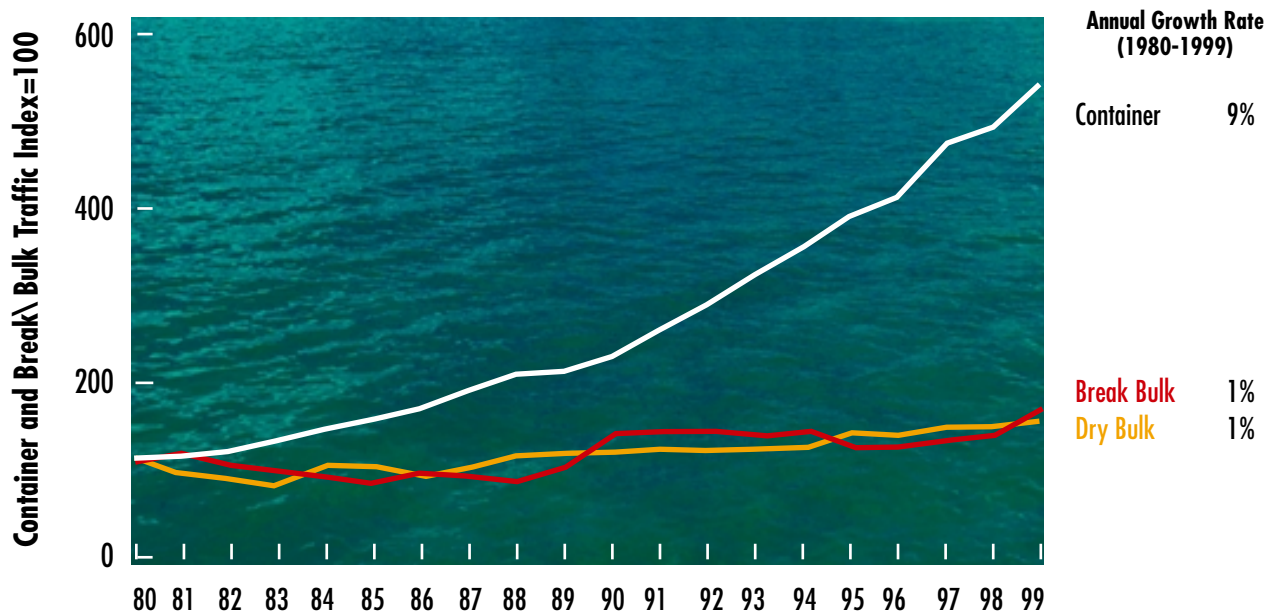
Having concluded that, despite its geographical disadvantage with respect to inland markets, Halifax is relatively cost competitive with other east-coast ports, one is led to examine current trends in the industry, to determine if they are the source of the stagnation in Halifax’s market share. There are four major factors that are profoundly changing the shipping industry world-wide: **containers, ship size, consolidation, and concessions.**

Containers

More than 95 per cent of the world’s general cargo is now transported in containers. Every major trade, and even most minor ones, are now “containerized”. One of the major benefits of containerization has been that it makes low-cost, frequent service available to shippers of all sizes. Today, there are over 2,400 container vessels. Combined, these ships can carry a total of 4.2 million TEUs. In 1970, the total value of the world’s merchandise trade was US\$300 billion. In 1995, it had reached US\$4.7 trillion, thanks in large part to the container. Virtually every nook and cranny in the world is now accessible to the container, allowing large and small shippers alike to access world markets.

Carrier Dynamics Traffic Patterns Major Liner Routes

Container traffic has grown much more quickly than bulk traffic.



Source: “Maritime Economics” (Stopford), Drewry Shipping Consultants

Before the advent of containerization, a shipper had to charter a whole vessel or get together with another shipper or shippers to share a vessel. Now, a shipper need only gather 20 tonnes of cargo, and off it goes on the next ship. This simplicity has led to huge increases in world trade. Containers have made it much easier for Nova Scotia shippers to access every corner of the globe. No longer do apple shippers, for instance, need to have enough cargo to fill a whole ship. Containerization allows them to sell a much better product when it is ripe, thereby achieving a higher price. Traditional break-bulk shipping is quickly being replaced by the container's efficiency, economy, and ease of handling.

Ship Sizes

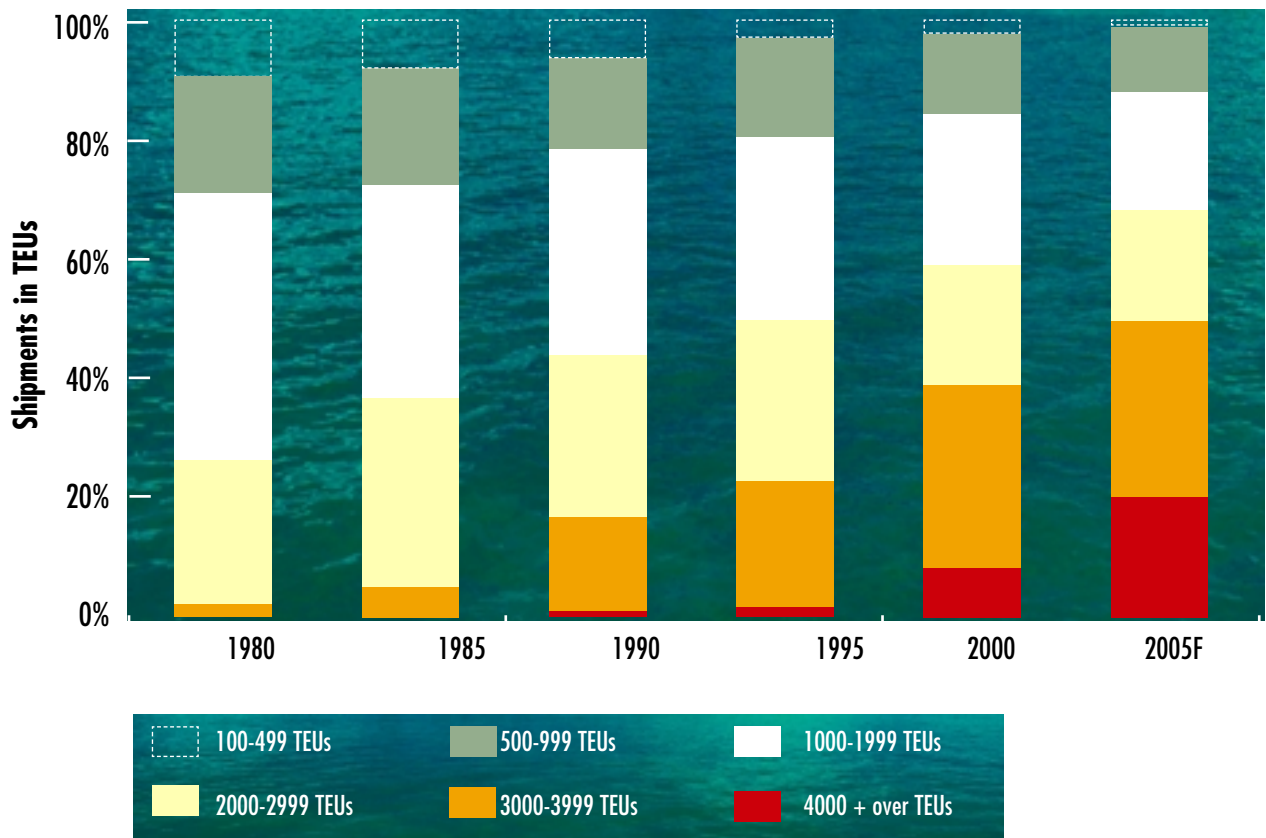
As container shipping has grown in popularity, so have container ships. Whereas early container ships could negotiate the Panama Canal, in 1988 vessels were introduced whose length, beam, or draft was greater than the canal's smallest lock can accommodate. These have come to be known as post-panamax ships and are generally capable of carrying more than 4,000 TEUs. Today, many lines are operating ships which carry in excess of 6,000 TEUs, and shipyards are gearing up to build the next generation of 9,000 TEU vessels.

As the graph below demonstrates, the industry has fully bought into the value of these larger ships as a way to control costs and bring increased efficiency to the world's trade routes. More and more vessels are being ordered, and it is estimated that by 2005 almost three-quarters of the world's shipping capacity will be represented by the three largest classes of ship.



Carrier Dynamics Container Fleet Development

Larger ship classes are expected to account for about three-quarters of slot capacity by 2005.



Source: Clarkson, 2000

Consolidation

The extensive use of containers and the shift to larger and larger vessels have made possible the use of the hub-and-spoke route structure for shipping, a development that is revolutionizing this industry just as the same structure has changed the U.S. airline industry since it was deregulated. (Appendix D discusses some of the more successful hub ports and explores the key ingredients to a successful partnership between a given port and a global partner.)

Hubbing, as it is called, reduces transport time and fuel costs, by reducing the number of port calls large ships make; increases efficiency, by allowing the realization of economies of scale for terminals through concentrated volumes; and promotes predictability for shippers, through a cycle of regular centralized deliveries and a ready redistribution network via transshipment to smaller vessels, rail, or road networks.

Hubbing does, however, have serious implications for ports and their future operations and growth potential. According to Alfred J. Baird, director of Napier University's Maritime Transport Research Unit,

Ships carrying 10,000–15,000 TEUs are envisaged for global liner alliances in the east-west trades which call at a few deep draft, mega-hubs such as Gioia Tauro, Italy, Mina Raysut, Oman and Freeport, Bahamas.

The pros and cons of the next generation of ships and the required global pivot ports are now being debated. However, there are barriers within traditional liner mainports to increased ship size stemming from:

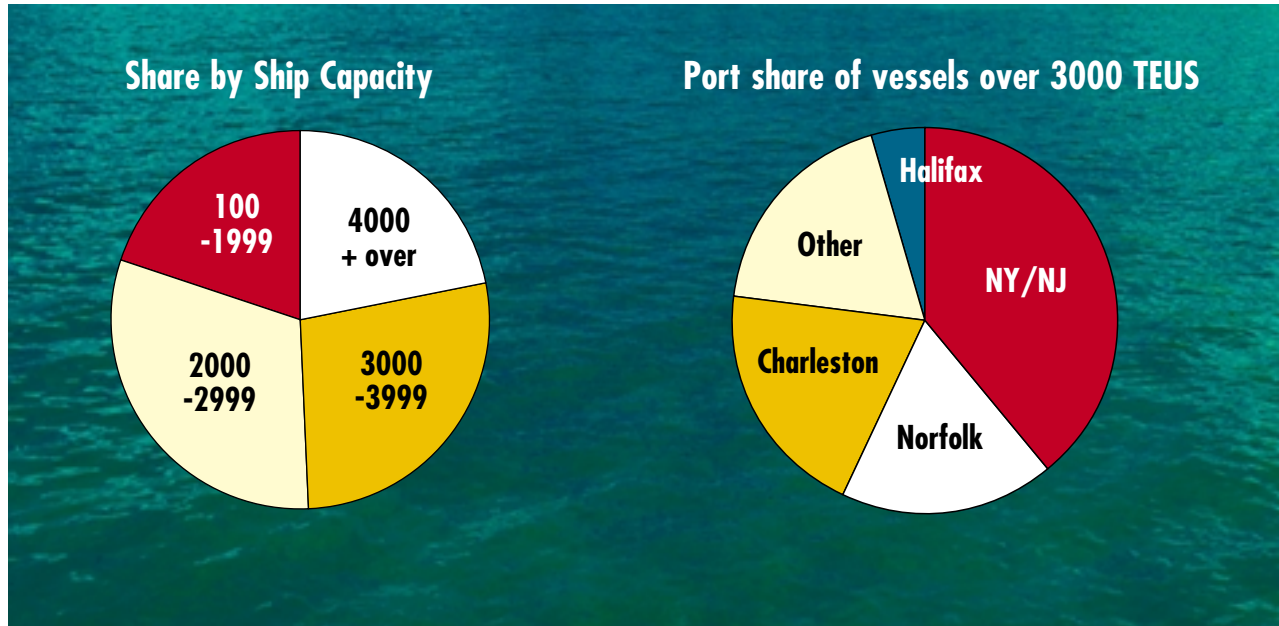
- a) physical and environmental constraints (e.g. draft and land availability);
- b) limitations on the number and deployment of cranes;
- c) the need for custom-built handling and information systems; and
- d) the high capital costs involved for ships and terminals.

Actions required by ports to handle larger ships focused on the provision of more and faster cranes and increased terminal stacking capacity. Clearly, some traditional liner ports will be unable to accommodate container vessels over 10,000 TEUs and withstand competition from offshore trans-shipment mega-hubs (Baird 1999).

The impact of consolidation into larger ships and fewer ports is clearly evident on the Atlantic trade routes. The majority of traffic is now carried by the three largest classes of vessels and handled by the three top ports. Halifax has a significant market niche in ships carrying 2,000 to 4,000 TEUs but has failed, despite its deep draft, to make significant inroads into the ever-growing trade in 4,000 TEU-plus sized ships.

Port Consolidation Share by TEU Ship Size (Imports and Exports, 1999)

A higher proportion of port activity among the largest vessels is accounted for by the top three Atlantic ports.



Source: PIERS data, 1999; American Association of Port Authorities (AAPA)

Concessions

Consolidation has forced the shipping industry to work at improving on-dock efficiencies and to be very aggressive in seeking to spread fixed costs across the greatest possible volume. Like many other industries, the container-shipping industry has experienced “globalization”. *

Whereas stevedoring and shipping companies were once local or national operations, the 1990s saw the emergence of companies able to bring substantial resources, in the form of capital and marketing, into play on a global scale. According to Makoto Ishii, executive vice president of Mitsui O.S.K. Lines,

The original globe-spanning alliances were established by 1996 (e.g. Mitsui joined with APL, Orient Overseas Container Line and Nedlloyd to form the Global Alliance in 1994). Further merger and acquisition led to a regrouping of alliance membership (e.g. Mitsui joined with APL and Hyundai in the New World Alliance in 1997). Only

* Much of this section is derived from Drewry Shipping Consultants Ltd. (1998, 35-36)

Evergreen Shipping Corporation and the Mediterranean Shipping Corporation operate outside these arrangements (Ishii 1999).

Similarly, there are a handful of truly global terminal-operating companies that have developed from both the stevedoring industry and the carriers themselves. They have been created in response to long-term trends in the shipping industry and the globalization of the world economy that has brought demands for higher levels of transport efficiency:

- the emergence of ever larger lines and alliances
- the use of ever larger vessels (up to 7,000 TEUs) making fewer calls on mainland routes, with the attendant requirement for more feeder services
- the creation of more door-to-door services to offer a complete logistics solution
- the increasing use of computerized systems and information technology

These megaterminal operators and shipping alliances are nudging the shipping industry towards what amounts to global vertical integration, in an ongoing effort to reduce costs, increase efficiencies, and improve revenues. The key to the success and phenomenal growth of hub ports has been granting concessions to these major global players, i.e. exchanging secure, long-term, cost-competitive access for massive private investment, guaranteed volume, and the associated revenue. Appendix E considers the scope of the examples set by the major international players and their rationale for massive investment in global consolidation.

Industry trends towards containerization, larger ships, consolidated port operations, and concessions to global operators allow for a straightforward definition of the conditions for success as a hub port:

- deep water
- proximity to major ocean shipping routes
- ability to transship goods to smaller vessels for delivery to convenient feeder ports
- access to rail, air, and road distribution networks
- massive private investment
- exclusive arrangements with a global partner

Halifax lacks only the last two, and even these are in principle available to it with a reasonable amount of effort. In fact, several global operations have already demonstrated interest in Halifax as a place to expand. Maersk Sealand short-listed Halifax during its megaterminal deliberations, and, during the recent lease negotiations between the Halifax Port Authority and Halterm, several other global operators visited Halifax to “kick the tires” at the South End Container Terminal. Furthermore, because the port of New York is not expected to be dredged to full post-panamax depths for 10 years or so, there exists a major window of opportunity for Halifax now. Among the possibilities available are expansion of the Fairview Cove terminal along the Rockingham shore or the development of a “greenfield” site such as Shearwater (see Appendix F for details on these two options).



To summarize: Halifax enjoys strong advantages with respect to four of the six features that distinguish successful hub ports, and there is no reason to think it cannot succeed in the other two. Industry trends, then, cannot explain the stagnation of the port of Halifax.

Stagnation Hypothesis #3: Port Governance

Industry trends towards larger ships and fewer, high-volume ports serving as collection and transshipment points for major global submarkets play into Halifax's hands. Halifax has the capacity to adapt and thrive as a hub port for North Atlantic trade. In fact, its increased volumes in recent years are directly attributable to the perfect match between the port, its facilities, and the current trends in the shipping industry. Yet, it is clear that this competitive port that fits so well the requirements of the 21st century has failed, up to now, to take full advantage of this new opportunity. Only port governance is left to consider as the reason for that failure.

“The globalization of the industry has been led, in the main, by the established terminal operators aggressively exporting their expertise and deal-making skills to all parts of the world,” according to Drewry Shipping Consultants (1998). And being first to market is vital even in an industry as slow moving as shipping by sea. “The remarkable worldwide simultaneous move towards privatization has created what most major port developers agree on as a 10-year window of opportunity to ride the wave of global privatization and become established as truly international players, since concessions/leases are typically being granted for 20–30 years,” Drewry says.

In the port context, “privatization refers to the transfer of port property from government to the private sector [but it also relates] to leasing facilities, licensing operations, and granting concessions” (de Monie 1992). It “represents a shift away from governments providing port services and port facilities, to private sector interests” (Cass 1999, 37). This trend appears to be accelerating:

Public-owned ports are becoming more commercially-minded too: the Port Authority of Rotterdam, the world's largest port, has just received the green light from City Hall to establish a wholly-owned private company with an operating capital of 15 million guilders ([US]\$6.2 million), which will take over the port's “outside” interests, including a 35 per cent stake in European Combined Terminals, Europe's biggest container handler (Barnard 2000).

At first glance, the Canadian system of port governance seems a good example of U.S. style commercialization — public port authorities negotiating lease arrangements with private companies for the provision of port and terminal services. In fact, the state of affairs in Canadian port governance is a stark contrast to the U.S. model and comes nowhere near the full privatization achieved in Britain or the for-profit corporatization at work in New Zealand (see Appendix G for a discussion of the privatization models in Britain, New Zealand, and the United States). The *Canada Marine Act* (CMA), proclaimed

in June 1998, is designed to achieve increased commercialism at Canadian ports and to free the local port authorities from the limitations identified under the previous Canada Port Corporation (CPC) structure. However, according to Michael Ircha, a prominent Canadian author on port matters,

Despite the commercialization thrust of the CPC Act, over time, bureaucratic rules, regulations and the constraints of the Financial Administration Act prevented Local Port Corporations from operating as true commercial entities. Delays in obtaining CPC and Treasury Board approvals for financing port development and dealing with land transactions resulted in Canadian ports being unable to tap emerging opportunities (Ircha 1999, 123).

It is doubtful that the CMA represents a sufficient departure from the previous CPC model to give Canadian ports the competitive chance they need if they are to survive in the global marketplace. The lessons learned from successful port-governance reform in other countries indicate that the CMA falls short in at least four critical areas, namely that it

- unreasonably limits the commercial freedom and autonomy of local port authorities
- fails to place control of the local port authorities in local hands
- severely restricts those authorities' ability to attract capital investment
- fails to place the primary emphasis on maximizing ports' economic potential

From a commercial perspective, section 28 of the CMA limits the activities of the local port authorities to "activities within the port related directly to shipping, navigation, the transportation of passengers and goods and the handling and storage of goods." The letters patent of the Halifax Port Authority, for instance, spend considerable time and detail outlining hundreds of activities that the local authority is and, in particular, is not allowed to undertake. This is a complex and cumbersome design that is not conducive to innovative commercial activity or rapid response to emerging opportunities.

In seeking investment capital, port authorities are similarly hamstrung. A local port authority can only pledge as security the revenues generated from their use of federal lands and cannot pledge the physical assets themselves – thereby substantially reducing the amount of credit available to the port authorities. The CMA also places a charge on the **gross** revenues of the port authority, amounting to five per cent on the first \$60 million, a charge which is to be paid annually to the federal government. It further requires port authorities to make payments in lieu of taxes to local municipalities, and, as agents of the Crown, port authorities also fall under various federal regulations, including access-to-information legislation, environmental assessment, and the *Official Languages Act*. All of which place additional costs and reporting requirements on the local authorities.

These commercial limits are exacerbated by the limits on local control on port operations. No one disputes that federal priorities often do not match local development priorities or fail to support the pursuit of particular local opportunities. In fact, the National Marine Policy, released in December 1995,



was designed to specifically address the problems created by this dislocation, and it stated that local users would select port-authority directors. The CMA changed this, and most port-authority directors remain accountable to the federal government, not the port's users. It has been suggested that this action was taken to avoid a shift in port priorities from dependence on federal grants to board accountability for the port's financial self-sufficiency (Ircha 1999, 124).

Continued centralized government control ensures that local port authorities will never be operated to maximize ports' economic potential. "Canada's primary international economic success has come from its continental trade with the US and, as such, the marine sector, with its focus on overseas trade, is not as important in Canadian transportation policy as it is in other more maritime-oriented nations" (Ircha 2000). In plain language, ports are less important to the federal government than road, rail, and air transportation. Canadian marine policy therefore reflects not the need to maximize the efficiency in transportation of goods but other, "higher" policy ends, such as national unity and addressing regional disparity.

In the context of the port of Halifax, this focus on political rather than economic priorities, mean that the Halifax Port Authority

- can only define a vision for Halifax that is acceptable to Ottawa, one that may or may not be compatible with regional priorities
- can only make a conditional commitment to achieving that vision, based on the attitude of the current federal administration
- has no commercial incentive to achieve the vision or to be innovative or aggressive in pursuit of it
- has limited financial resources available with which to achieve the vision in any case
- is committed to maximizing the financial return to Ottawa, as opposed to the return to the port and the region in the form of revenue reinvestment
- can only focus on the short to medium term, as dictated by the federal electoral cycle

Of the three possible explanations of Halifax's stagnation, only the third — a clumsy public-sector-dominated model of port governance, one that is out of step with the worldwide trend toward port privatization — makes sense.

So the way ahead is clear.

SECTION 3

ATTRACTING THE PRIVATE SECTOR

What Halifax Must Do Now

Canadian port reform has advanced to the point where local port authorities are not the only avenue available for port growth. Private partners are working within the Canadian port system, and the CMA does not bar the existence of exclusively private initiatives. In considering container handling and actual terminal operation, for example, the Halifax Port Authority is only responsible for the federal lands designated in its letters patent and whatever further land it elects to acquire over time. It is possible for a private consortium to deal with the authority only in its role as the provider of common-user port services and not as a landlord. There are substantial lands within the port of Halifax (including the Shearwater and Rockingham sites) over which the authority has no jurisdiction, lands that would allow for innovative, private-sector-driven initiatives to address Halifax's current competitive situation—initiatives not hampered by the restrictions tying the Halifax Port Authority's hands.

Why pursue a private-sector-driven option and not continue to strive for full privatization of the HPA? Simply, time and experience mitigate against that solution. Market opportunities do not last forever, and Halifax has a finite window in which to act in an effort to seize on its potential. That window is closing. Depending on how one does the math, we have between two and five years in which to move forward with a Halifax hub before the opportunity will be lost.

In the industry, and particularly among analysts and Halifax watchers, it has become a common theme that there is a 10-year window for action. This window has been variously defined:

- In 1996, the Metropolitan Halifax Chamber of Commerce looked at industry trends and set out a 10-year vision for the port of Halifax, which was to be achieved by 2005.
- After the Maersk Sealand superterminal competition, industry analysts projected growth for Halifax until 2003, when new terminal capacity at New York/New Jersey would come on-line.
- Other analysts have said that Halifax's role as a FILO port for post-panamax vessels is assured until the dredging of New York/New Jersey is complete, with estimates on that running from 2005 to 2015.
- The global shift to the largest size container vessels, and to the fewest number of hub ports, will likely be almost complete by 2005.
- In 1998, Drewry Shipping Consultants estimated that the global wave towards port privatization would have completed its course within 10 years, or by 2008.

Partnerships and strategic alliances do not appear overnight. Megaterminals take time to plan and build. For example, four years will pass between Maersk Sealand's decision to stay with New York/New Jersey and the completion of the terminal expansion in 2003. It is now 2001. Four years from now, Halifax will have passed both the 2003 and 2005 deadlines and will be perilously close to the 2008 estimate. Put bluntly, Halifax has run out of time to wait — if no decision is made within the next two years, its opportunity to become a North Atlantic hub port will have passed.

More to the point, even if we had all the time we need, experience has shown that the federal government is not interested in achieving full privatization of the local port authorities and that, even if they were, global maritime trade is not a Canadian national priority. The CPC was intended to implement commercial port operations and instead, created a bureaucratic system that was so strictly centrally controlled as to cost ports money. The CMA started as an effort to drive control into the hands of the local community and free the port authorities to operate as truly profit driven enterprises, instead it maintained a patronage plum and placed even further limitations on the commercial capacity of our ports. Just recently, in announcing a new national transportation plan, Transportation Minister Collenette focussed on “safety and pollution on congested highways” and remarked that “80% of trucks crossing the U.S. - Canada border go through just five very busy gateways”. The focus of the domestic agenda is the “new pressures that increasing trade, particularly within North America, is putting on our trade corridors and border crossings”, (Collenette 2001).

Halifax must accept that, despite government assertions to the contrary, Canada has a commercialized port-governance system that is not commercially driven and, that it is under this system that we must find a way to achieve success. The examples of Montreal and Vancouver, ports that have continued to grow under both the CPC and the new CMA, are instructive. They demonstrate that, in this politicized environment, success is only possible under one of two scenarios:

- where a port, or a group of port stakeholders, has the political influence to “make things happen” for the good of the port
- where the private sector takes the central role in port investment and development

Both Montreal and Vancouver reside within, from a population and popular-representation perspective, significant political hinterlands, i.e. they have the votes in parliament and around the cabinet and caucus tables, to influence, if not direct, federal marine policy. This is a political significance that Halifax cannot hope to attain any time soon. Whether you believe government involvement in the economy is good or bad, it is time to recognize the relative political significance of Halifax and move on.

In terms of the private sector, Montreal has the essentially undivided attention of CP Ltd. on the east coast. CP has invested heavily both in ships matched to the size constraints of the Montreal gateway and in the rail and road distribution network linking that gateway to its market. In Vancouver, meanwhile, the port authority and the private sector have taken the bull by the horns and invested heavily in the port

to combat a similar situation faced by Halifax — major investment by U.S. rivals. The relationship between Halifax and its private partners has not always been characterized by a similar singularity of purpose or a co-operative approach, but this is a situation that can be changed, and changed quickly.

The ports of Montreal and Vancouver also demonstrate that private investment and political influence can only build on industry trends — not buck them. Government actions, including subsidized ice-breaking in the St. Lawrence River, coupled with heavy CP investment have made Montreal a cost-effective gateway port, with fast linkages to a large and nearby marketplace. However, although this public- and private-sector support has enabled this port to expand its containerized volume by 75 per cent since 1990, given the industry trends outlined already, it confronts depth and capacity constraints such that no amount of further investment will enable it to become a true North American hub port. Vancouver, in contrast, has leveraged both political influence and substantial investment with industry trends towards larger ships, consolidated transshipment terminals, and massive growth in Pacific trade, and has achieved almost triple the success of Montreal and expanded its container volumes by over 230 per cent.

The lesson here seems obvious — not only must Halifax seek a private-sector solution, it must also seek one that makes sense in the commercial and political climate in which it operates. At present, Halifax is apparently seeking gradual improvements in efficiency in order to increase its value as a regional gateway, a feeder port for existing or projected European transshipment hubs, and an outlet valve for occasional overflow from neighbouring hub ports. This vision is problematic for two reasons. First, as outlined earlier, U.S. competitors are investing heavily to expand capacity and eliminate the overflow on which Halifax is currently depending. Second, Halifax, in contrast to Montreal, lacks the large local market to sustain itself as a major regional gateway. As a transshipment hub, on the other hand, Halifax is Canada's only option and, as has been demonstrated earlier, offers a private investor significant returns.

Moving Forward Now: Value-Chain Integration

Halifax must move now to copy the success achieved elsewhere. A formal value-chain integration would link the key players, including the terminal operators and CN, to improve collective efficiencies and maximize marketing resources. Any integration, however, must bring together those who have the most at stake and have the most leverage with which to affect Halifax's competitive position directly. But arguments in favour of integration and co-operation are not new. The three studies cited in Appendix B all envision a collaboration between the existing key partners. The analysis in this paper, and painful experience over the last decade and beyond, demonstrate that this option is not likely to result in success for several reasons:

- As was clearly demonstrated during Halifax's Maersk Sealand bid, a loose confederation of interests leaves far too much room for competing political agendas, failure to agree on a common commercial goal, and the exclusion of critical elements for success.



- Even if such a commonality of purpose could be achieved and maintained, none of the current local players, with the possible exceptions of CN and Ceres, have the fiscal resources to commit to the large-scale expansion which would be necessary to handle the volume increases associated with hub-port status and a secure long-term future for Halifax.
- Even if the local players could construct a major transshipment terminal on their own, industry trends are driving traffic into globally integrated value chains that link global shipping alliances with global terminal operators in long-term arrangements. Only one of these global linkages could deliver the guaranteed volume necessary to sustain Halifax as a hub port.

An alternative to a loose collaboration would be a formal joint marketing agency (JMA), one which would represent a permanent effort to connect all major local stakeholders to a core negotiations process. A truly inclusive and revitalized port development commission, so to speak. A JMA would provide improved market awareness to all parties, but it would not address the need to optimize the efficiency of container handling nor would it be focussed on cost reductions across the value chain. Nor would it address the issue of financing or guaranteed volumes raised above. To achieve the symmetry necessary in Halifax, something more than a local JMA is required.

In contrast to a JMA, a logistics/supply-chain joint venture, similar to that outlined in the global success stories related in Appendix E, would be charged with joint optimization of both physical logistics and marketing. Such a joint venture could focus on identifying the real bottlenecks in the current chain and focussing investment there. In addition to this balanced capacity planning, the joint venture could also optimize ongoing market analysis. This would allow flexible and coordinated responses to shifts in the logistical performance of key competitors, changes in competitor's pricing, or adjustments in the needs of the end users.

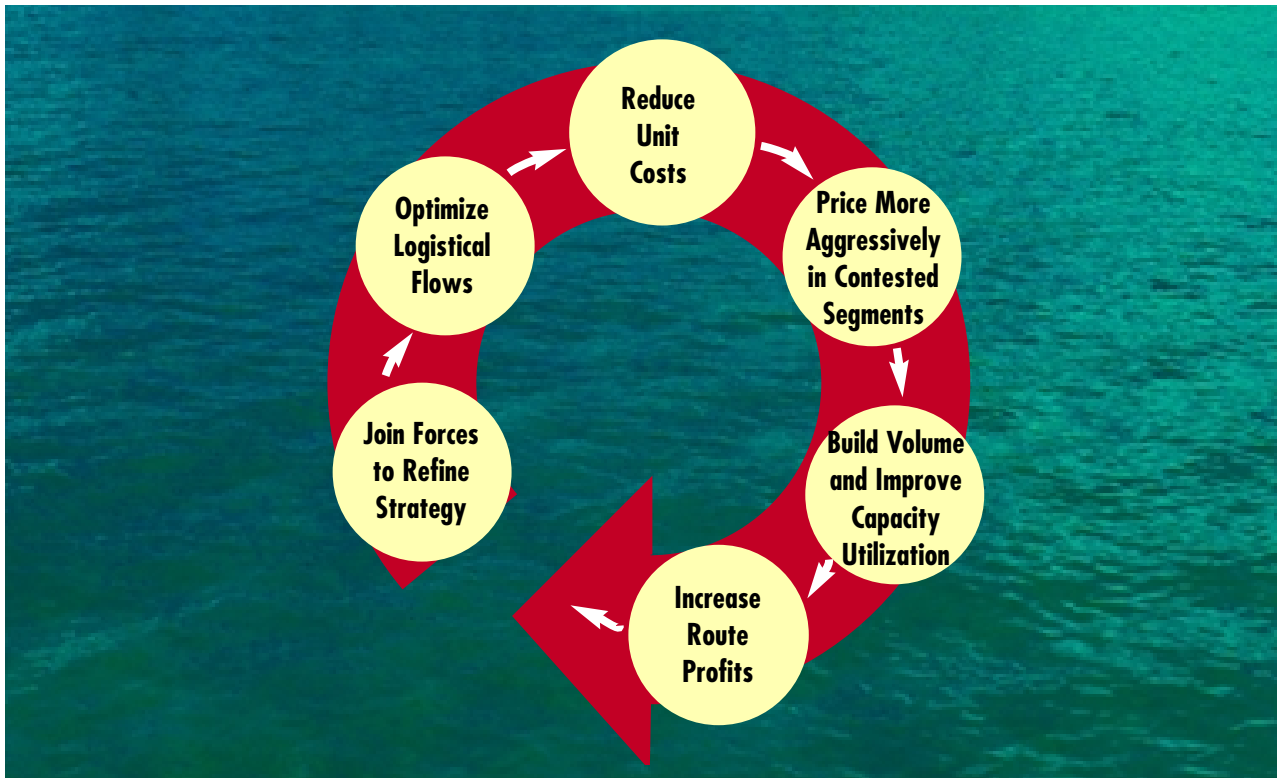
Halifax's port stakeholders could also look to a full vertical integration of the land-based operations under CN. This would involve a CN terminal coupled with CN's rail links and negotiating directly with a global carrier for exclusive access at highly competitive prices in return for guaranteed volume. This would cement CN's involvement in port activities through ownership or co-ownership of a terminal. It would not, however, tie a global supply chain to Halifax as effectively as a direct investment in a joint venture would – nothing commits the private sector as strongly to a place or a project as their own money. In addition, CN would likely come under regulations compelling it to deal even handedly with other terminals and ports, thereby denying the fullest advantage to Halifax of a freely competitive private-sector joint venture.

A better option would be a joint venture including CN and a global terminal operator or shipping alliance. Such a venture would link the key cost driver of the Halifax trade route (CN) with the investment potential and guaranteed volume (global player) necessary to achieve sustainable volume efficiencies and cost advantages. This is the model that has proven so successful for consolidated operators like

HPH and P&O Ports and would create a “virtuous circle” (illustrated below) that could reduce overall costs for ocean carriers, improve responsiveness to market demands, and focus investment at the true bottlenecks for the Halifax route.

Context
Strategic Imperatives for Halifax Route

A virtuous circle involving improved market share and increased route profits would most plausibly begin with a coordinated effort at cost reduction.



In the case of the port of Halifax, the virtuous circle would recognize that existing margins are thin and that they would not sustain price decreases without cost reductions. The route via Halifax to the U.S. Midwest begins with the handicap of additional rail miles and must keep its unit-cost position better than its competition’s. Share gains are, therefore, unlikely without continued and enhanced price leadership. On the other hand, many ocean carriers are highly price-sensitive in their choice of port — volume will follow price.

Volume, in turn, is likely a key driver of logistical efficiency and cost for both terminal and rail segments. Increased volume drives various economies of scale, enabling more frequent unit trains and maximum return on the potential of large physical assets like post-panamax cranes. These economies will



improve profitability, sustain the commitment of capital to the route, and furnish capacity additions to accommodate growth.

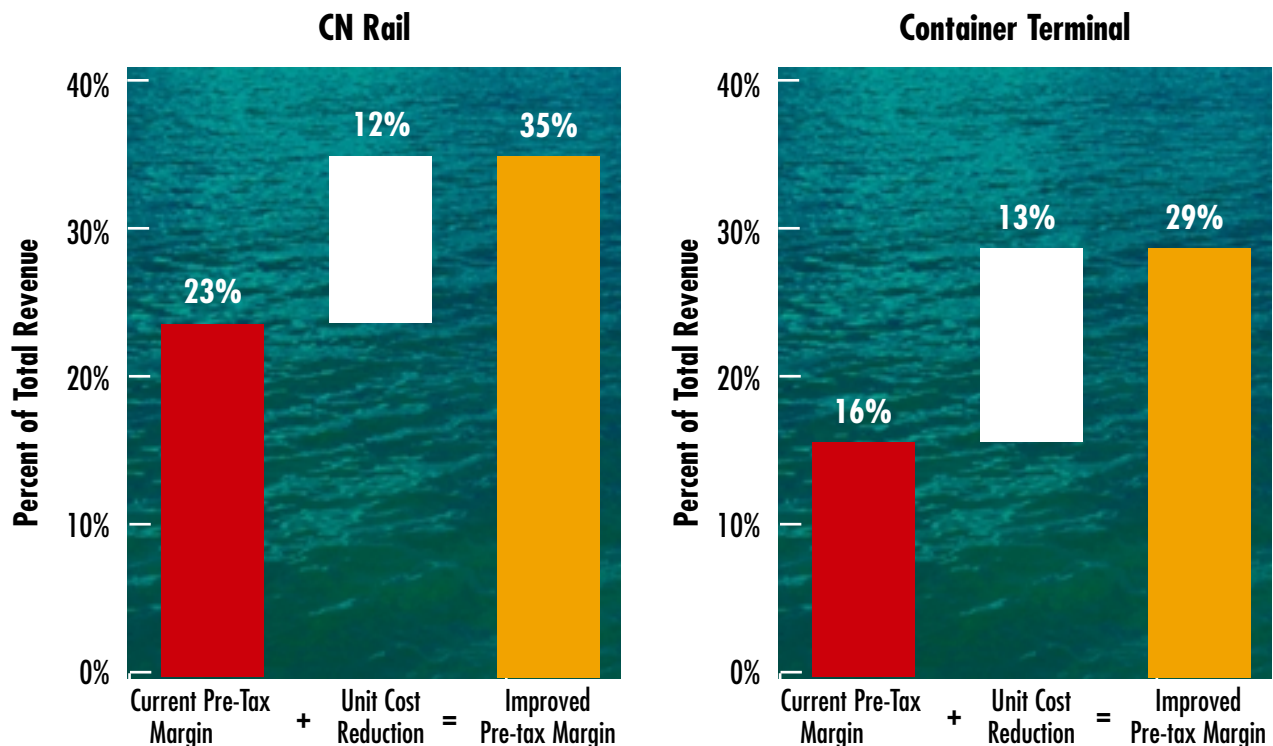
Turbulent market forces also demand an agile, coordinated response. Several competing ports, among them New York/New Jersey, provide more integrated negotiating processes. Joint optimization will drive not only cost reduction but also common strategic redefinition.

The value of this virtuous circle for the players within it is easily demonstrable when one considers the combined profit impact of cost savings, price decreases, and volume improvements. In step one, collective efforts are targeted at achieving cost and productivity gains through economies of scale and resource sharing. The graph below demonstrates the impact even a 15 per cent improvement could have for both CN and a Halifax terminal operator, in terms of overall unit costs and profitability.

Strategic Imperatives

Profit Impact of Cost and Productivity Gains (15% Improvement Scenario*)

Profit margins are very sensitive to unit cost reductions, which might be achieved through improved utilization and joint logistical optimization.



* Assumes a 15% reduction in unit costs

Source: CN Rail Annual Report; Calls to Halifax Container Terminals

As the virtuous circle continues, this increased profitability would open the way for price decreases. The following figures outline the relative price sensitivity of the shipping lines currently calling at Halifax and then use this information, combined with the current traffic levels of the particular lines, to supply a conservative estimate of the volume increase or decrease that would be associated with a 10 per cent rise or fall in the price of shipping a container through Halifax to the Midwest.

Strategic Imperatives Price Sensitivity of Ocean Carriers

Most major ocean carriers are highly sensitive to price changes in Halifax.

Ocean Carriers	Sensitivity to Price Decreases	Sensitivity to Price Increases
Hapag Lloyd		
P&O Nedlloyd		
Maersk Sealand		
COSCO		
Mediterranean Shipping Company		



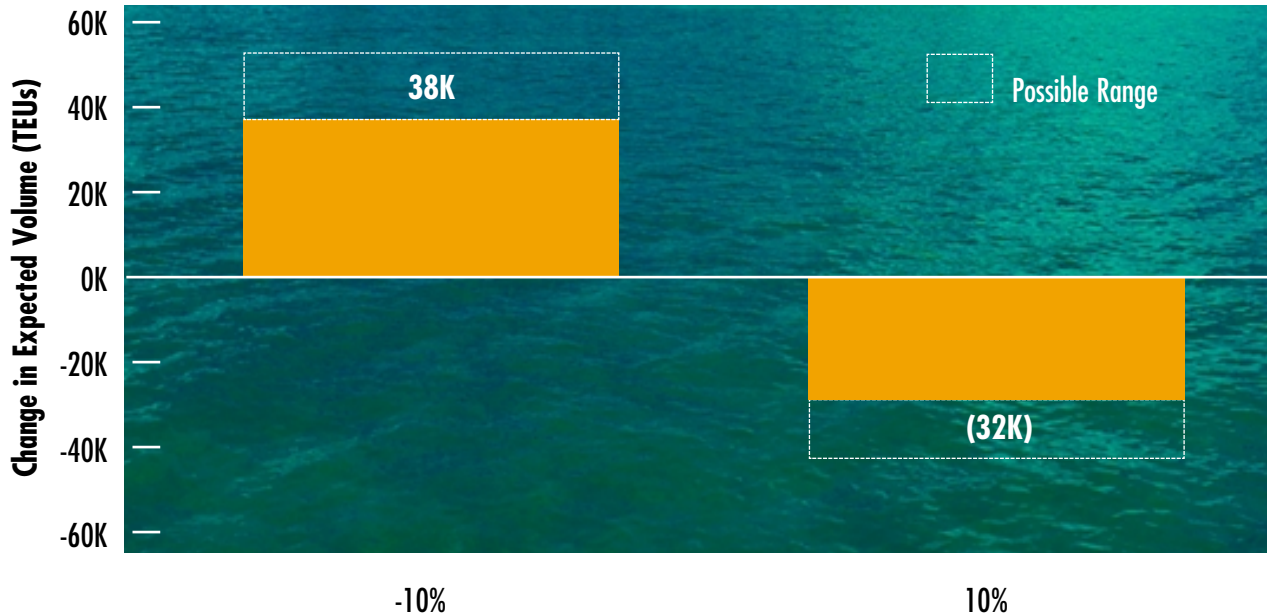
Rationale for Halifax Activity

- Gateway to Canada
- Rationale for Midwest traffic is the shorter time compared to the New York route.
- Gateway for Canadian imports/exports
- Transshipment port and top-off center for European imports
- 25% of traffic goes to Midwest, 25% to Canada, 50% is transshipped
- Last port of call in North America, used for Canadian exports
- Gateway to Canada because of competitive prices

Source: Competitor Calls

Strategic Imperatives Volume Impact of Relative Route Pricing Changes (Halifax to Midwest)

Traffic bound to the Midwest is highly sensitive to Halifax's relative price position.



Percentage Change in Volume (base scenario)	Change in Price
51%	-44%

Note: Price changes on both rail and port rates; base volume is 74000 TEUs for Halifax to US Midwest

Source: Competitor Calls; Halifax Port Authority Annual Report

Based on a current volume of 74,000 TEUs, a 10 per cent price decrease offers the potential for a 50 per cent increase in Midwest traffic, with further growth potential represented by the dotted lines above. A 10 per cent increase, however, would lead to 44 per cent of the current traffic going elsewhere. In order to establish a sustainable competitive edge, Halifax must continue to seek reductions in terminal and rail costs. Falling costs will make room for decreases in prices, thereby improving the port's attractiveness to price-sensitive shippers and shipping lines.

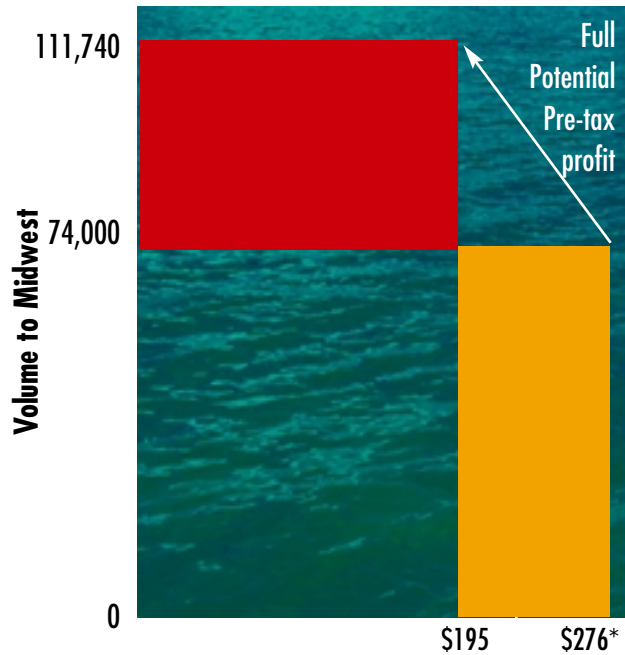
As big-box retailers have learned, volume is everything. Combining a 15 per cent cost reduction through efficiency gains with a 10 per cent price reduction would result in a 63 per cent pre-tax increase in profit, even allowing for the decreased margin from the higher volumes (see below).

Strategic Imperatives

Profit Impact of Volume Increase* (Rail and Container Handling Segments Combined)

A 63% increase in pre-tax profit would result from combining cost optimization with a linked volume increase and a 10% price reduction.

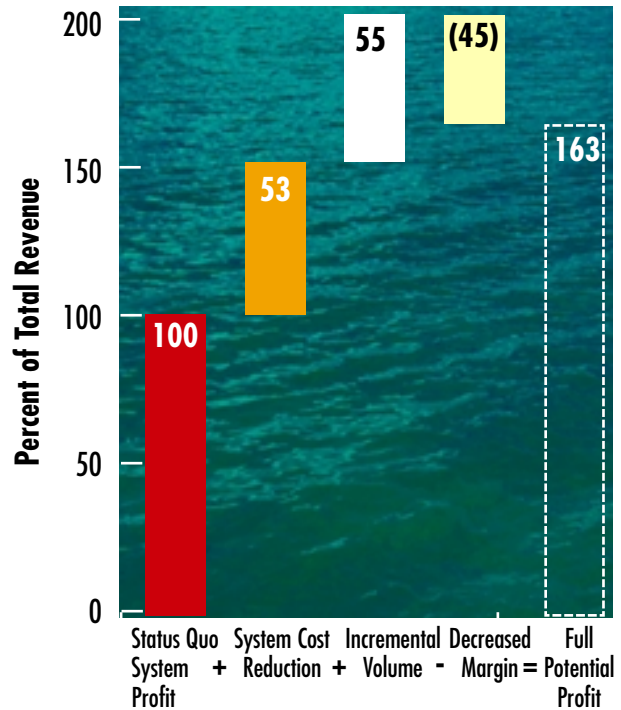
**Expected Profit Impact of 10% Price Decrease
(Following Linked 15% Cost Reduction)**



Pre-tax Profit per TEU (US Dollars)

* After cost reduction of 15%

Full Potential Profitability



Source: CN Rail Annual Report; Calls to Halifax Container Terminals; Halifax Port Authority Annual Report; Canada News Wire Article on Halterm Income Fund

Increased profit, volume, and service at a lower price — this is the future of Halifax if a private-sector logistics/supply-chain joint venture charged with optimizing both physical logistics and marketing can be secured. Such a joint venture would focus on identifying the real bottlenecks in the current chain and focus investment there. In addition to this balanced capacity planning, the joint venture could also opti-

* Figures derived from Bain & Company (2000)



mize ongoing market analysis. This would allow flexible and co-ordinated responses to shifts in the logistical performance of key competitors, changes in competitors' pricing or adjustments in the end users' needs. Perhaps most importantly, such an arrangement would maximize the incentives for all partners in the joint venture to commit themselves to the port of Halifax and the commercial success of this venture.

SECTION 4 CONCLUSION

Halifax will not maintain its current volume or market share as a local feeder port. It can grow only as a hub port for North Atlantic trade, and becoming a hub port requires massive investment, improved performance from its main rail link to markets, and a commitment from a global shipping or terminal partner.

The port of Halifax has to respond to the changing world of international shipping. It needs a commitment from CN Rail to reduce costs and increase efficiencies in order to eliminate the competitive disadvantage that stems from its land location. It needs to bring aboard either a global terminal operator or a global shipping line committed to filling those freight trains through a substantial increase in volume. And it needs to leverage that volume to improve efficiency and profitability across the supply chain.

The inducement for CN Rail is that a joint venture including one of the multinational companies that are using larger and larger ships and fewer and fewer ports can create huge economies of scale: more containers, more trains, more revenue. The inducement for the shipping line/terminal operator is that a long-term concession for a terminal creates exclusive access, increases efficiency, reduces dealing with government bureaucracy, and justifies investment by generating increased profits.

The Halifax Port Authority is not well positioned to seek a bold new private-sector partnership, and there is no longer time for entering into long policy debates at the federal level in an effort to improve this situation. Other elements of the Halifax port community must seek to bring CN Rail and a major global player into a joint venture that will operate a privately run terminal, on land not currently controlled by the port authority, in exchange for a long-term concession.

Given the global race to privatization through concessions to consolidated private-sector terminal operations, and the current development plans for Halifax's east-coast competitors, if no decision is made soon, the choice will already have been made, by others.

APPENDIX A: PORT STAKEHOLDERS

Halterm

Halterm, the first common-user container terminal in Canada, was built by a consortium of CN, Clarke Transportation Canada Ltd., and Halicon, a crown corporation owned 80 per cent by the Province of Nova Scotia and 20 per cent by the City of Halifax. Approval was received from the federal department of transport in December 1968, and Halterm Ltd. opened for business in November 1970. Halterm is now operated under a joint management agreement by CN and Clarke Transportation and is owned by the Halterm Income Fund, which is a publicly traded limited-purpose trust established under the laws of Nova Scotia.

Halterm, located in the south end of the city, adjacent to Point Pleasant Park, boasts two berths: Pier C, which is 600 metres long, and Pier B, which is 381 metres long. Minimum water depths are 14.3 metres at the north end of Pier C and 13.7 metres at the south end, and 14 metres on Pier B. The total open area is 29 hectares, (71.5 acres) which can store 12,500 TEUs. The terminal is equipped with four container gantry cranes, two of 40-tonne and two of 36-tonne capacity. One gantry crane is capable of working both Pier C and B. In May 2000, Halterm took delivery of two post-panamax cranes (capable of servicing vessels too wide to go through the Panama Canal), which were installed along Pier C, allowing the terminal to handle the largest container vessels afloat.

Cerescorp

The Cerescorp terminal, located in Fairview Cove on the shores of the Bedford Basin, opened in 1981. One of about 30 Cerescorp facilities around North America, it is owned by Kristos Kritikos of Chicago and consists of one 660-metre berth, with a minimum water depth of 13.7 metres. With 24.9 hectares (61.5 acres) of open storage, it is capable of storing 7,000 TEUs. The terminal is equipped with three container gantry cranes of 40-tonne capacity.

CN North America

CN is Nova Scotia's sole rail link to its inland markets and hinterlands. According to Paul Tellier, president and chief executive officer of CN, the container service of the port of Halifax, which accounts for 26 per cent of the port's total tonnage, has "a huge opportunity" to increase its share of the

[c]ontainer traffic from Europe to the U.S. Midwest [which] is the fastest growing component of the volume handled by the Port of Halifax. In 1994, Halifax handled 13,000

TEUs to and from the Midwest; by 1998, the number had grown five-fold to 65,000. The arrival of new shipping lines in Halifax this past year will contribute further to this growth. But right now, the Midwest market accounts for only 15 per cent of the total container traffic through the port of Halifax (Tellier 1999).

He also noted that, while east–west traffic in North America has been growing at about four per cent a year, north–south traffic has been growing at more than 10 per cent and that CN’s access has made Halifax competitive with New York, Baltimore, Norfolk, and other east-coast ports. This growth in north–south traffic offers a second new market for Halifax, one in which it has virtually no presence at the moment, the U.S. South:

The container that leaves Rotterdam on Monday and arrives in Halifax on Saturday will be available in Memphis on Wednesday morning. That’s an 89-hour trip from Halifax to Memphis. If the container arrived in Charleston, it wouldn’t reach Memphis until the following Sunday morning, in spite of the fact that Charleston is about 1,200 miles closer to Memphis than Halifax (Tellier 1999).

Despite this advantage, Tellier cautioned that the port could not become complacent and urged it to continue to upgrade its container handling facilities. In the meantime, CN itself continues to aggressively pursue improvements to its North American system through long-term working arrangements (with Burlington Northern and Kansas City Southern) and mergers (with Illinois Central and Wisconsin Central).

Labour

Labour remains a key component in the efficiency of the port, despite a steady decline in the number of jobs at the port of Halifax. The largest union is International Longshoreman’s Association, local 269, founded in 1908. At one time, it had as many as 1,800 members, who worked mostly from December to April, when the St. Lawrence River was closed to navigation because of ice; in 2000, it had 264 members but was advertising for new recruits and hoped to add 71 new members to its local in 2000–2001. The checkers’ union has 76 members, the maintenance and gearmen’s union has 55 members, and the watchmen’s union has two members.

The Province of Nova Scotia

The provincial government is another key stakeholder because the port of Halifax is a major economic engine for mainland Nova Scotia. The government had a voice through the Halifax–Dartmouth Port Development Commission, which it and the City of Halifax funded jointly; however, it has withdrawn its funding for the commission, and that agency has closed.

The Port Development Commission played a key role in establishing containerization in Halifax, as well as other facilities, most notably Autoport, the second container terminal at Fairview Cove, and the offshore supply base at Pier 9. It functioned, until the early 1990s, as a development and promotion agency. Since the early 1990s, it played more of a public-policy and advocacy role, sponsoring, for example, a luncheon speech given by Nova Scotia's minister of Economic Development, Gordon Balser, at the New York Yacht Club in December 1999. It was here that the minister told an audience of senior shipping executives, "The Port of Halifax is one of Nova Scotia's most powerful economic engines [and] the envy of other East Coast container ports. Halifax's deep water allows the world's largest container ships to call fully laden, a feat these vessels cannot accomplish in competing ports." He added that, "our port can help make your business more profitable." Regrettably, he did not say how.

The Halifax Port Authority

The federal government exercises control of the port of Halifax through the Halifax Port Authority. According to its Web site (www.portofhalifax.ca),

The Halifax Port Authority was established in 1999 as an Agent of the Crown. The Authority administers and promotes the Halifax Harbour as well as the Bedford Basin and the Northwest Arm. We are responsible for building and maintaining our own port facilities including our two container terminals, South End and Fairview Cove. Along with our port partners, the Halifax Port Authority maintains Halifax as one of the finest ports in the world.

On March 1, 1999, the Halifax Port Authority succeeded the Halifax Port Corporation. Halifax was one of the first of 18 Canadian ports to implement this administrative change as required by the Canada Marine Act (Bill C-9) which was passed on June 11, 1998. The Halifax Port Authority's mission is to develop, market, and manage its assets in order to foster and promote trade and transportation and to serve as a catalyst for the local, regional, and national economies.

HPA is responsible for building and maintaining its own port facilities which it rents to expert operators. HPA also owns and leases harbour waterlots. HPA allocates berths and anchorages, works closely with the Navy and Coast Guard in planning for harbour emergencies, and promotes its own facilities and the harbour in general. Some of the key facilities at HPA include Fairview Cove Container Terminal (Operator – Cerescorp Company Inc.); South End Container Terminal (Operator – Halterm Limited); Richmond Terminals; and Ocean Terminals. Other facilities at the Port of Halifax include bulk handling facilities, oil wharves, and a high volume ro/ro terminal.

The role of HPA marketing as a port partner is to provide leadership to fellow stakeholders including terminal operators, Canadian National Railroad (CN), port labour, shipping lines and agencies with respect to existing business and new opportunities. HPA also works with business development agencies and shipper organizations to attract new business opportunities for the port and its users. HPA's involvement with these organizations is diverse ranging from memberships and/or sponsorship to participation in trade missions, educational seminars for exporters, port facility tours, and the provision of information. Over the past ten years HPA has generated \$21 million in income based on \$130 million in revenue.

APPENDIX B: PREVIOUS STUDIES

A number of studies conducted during the past decade have focussed on various aspects of the region's ports and transportation infrastructure. Their conclusions have one theme in common: Halifax has lost its way and is no longer the bold innovator that it was in the mid to late 1960s, when it built the first common-user container terminal in Canada, featuring a unique on-dock rail-transfer system that the United States began to use only during the 1980s.

Report of the Task Force on Port Related Opportunities

In October 1996, the Metropolitan Halifax Chamber of Commerce released its Report from the Task Force on Port Related Opportunities. The conclusions of that study are reproduced below:

1. The Port of Halifax, currently the 3rd largest in Canada and the 5th largest on the eastern seaboard, is a major but underestimated driver in the local and regional economy. It has experienced large swings in business volume over the past ten years but has recently seen strong growth in container traffic — the most significant cargo mode in global trade.
2. Due to major changes occurring in global shipping, “hub” and “spoke” or “local feeder” ports will develop further on the major world trade lanes. Halifax is located one of the three largest lanes — the North Atlantic route between Europe and the eastern seaboard of North America. Hub ports will see substantial growth in traffic, particularly container volumes which will increase at close to 10% per year for the foreseeable future. Feeder ports will be relegated to serving local markets only. Other ports will become uncompetitive and will no longer receive any significant trade.
3. Halifax has many natural advantages that make it an obvious candidate as an eastern seaboard hub port, or even as the major hub. It also has some current significant weaknesses, particularly the consequences of political factors, that will prevent the Port achieving its hub potential and in fact will guarantee its relegation to feeder status unless they are addressed immediately.
4. External factors, which strongly influence Port costs and other Port operations, are at present largely beyond the Port's control but will play a strong role in determining the port's future direction. Many of these have positive consequences for Halifax. However a number are negative and may fatally obstruct the sustained development of the Port. Stakeholders in the Port of Halifax have a short window of opportunity to influence these factors and ensure they do not remain as obstacles to the Port's development.

5. Changes to Canadian port operations associated with Bill C-44, the Canada Marine Act, could potentially provide the Port with all the tools it requires to establish itself as the major eastern seaboard hub. However the current bill retreats from key positions established by the National Marine Policy in 1995. The arguments for these retrenchments are unsupportable. Without provision for local autonomy and control, and unfettered investment, the Port will not have the ability to control its own future. This autonomy is essential if hub port status is to be achieved.
6. If the Port of Halifax is permitted to take advantage of its strengths, address its weaknesses, and influence the external driving forces without constraint, and if all key stakeholders unite to achieve this vision, Halifax will become a major eastern seaboard hub port within ten years. The total business volume will increase about six-fold during that time. As many as 24,000 new direct and indirect jobs will be created, and as much as \$2 billion in direct local spending will result.
7. If the future actions of the Port and its stakeholders continue to be constrained, the Port will be relegated to a minor eastern feeder port with less than half its present business volume.
8. **There is no other realistic and viable option for the port. The status quo will not continue.**

The opportunity in front of the Port of Halifax is nothing less than for the Port and City to regain the relative global status, prominence and position of wealth in North America that the city held in the nineteenth century. *There is no significant disadvantage to any other group within the region or within Canada that would result from the Port of Halifax implementing all the above recommendations to achieve this status. Halifax's primary future competitors are U.S. ports, not Canadian ports.* With a major world port, Nova Scotia will move from “have-not” status in Canada to be a “have” province and a major contributor to national wealth and prosperity (Metropolitan Halifax Chamber of Commerce 1996).

Greater Halifax Multi-Modal Study, 1996

Booz Allen's 1996 study started as an examination of whether Halifax needed a second airport at Shearwater (a seaside air base being divested by the Canadian military) and whether the site was suitable to be developed as a global transpark similar to one being developed in Raleigh–Durham, North Carolina. The notion of two airports in a city the size of Halifax didn't fly, so Booz Allen then suggested an alternative for the Shearwater site.

The consultants advocated (Booz Allen 1996) the development of a new-generation container terminal either at Shearwater or along the Rockingham shore of the Bedford Basin. Shearwater made sense because it is located in an industrial area, the site has a rail spur running through it, it is less than five kilometres from a 100-series highway, and there is upwards of 2,500 acres of backup land available for port, distribution, and industrial development — a site which does not have anything comparable to it anywhere along the whole eastern seaboard of North America.



Booz Allen suggested that Halifax leverage its position to become a multimodal North American gateway. It recommended that Halifax embark on a strategy to meet changing market conditions, including expanding trade links with southeast Asia and the Indian subcontinent, participation of shipping lines in consortia or alliances, increasing the size of vessels serviced to post-panamax, and improvements to rail service. It reiterated the port's strengths: its natural deep water, the short transit times from Europe facilitating FILO (first in, last out) operations, unparalleled on-dock rail facilities, and access to the North American heartland through CN's impressive rail network.

Booz Allen advocated a seven-pronged strategy to cure the port's ills and take it into the next century:

- establish a strategic alliance with CN to improve service and reduce costs
- create a strategic alliance with an ocean carrier consortium, targeting it as an anchor tenant I
- a new terminal development
- invest in new equipment such as post-panamax cranes in anticipation of future requirements and to stay ahead of the game
- join in a strategic alliance with another port
- embrace new technologies as a vehicle for growth
- expand terminal capacity through incremental growth, leading to the development of a new terminal site
- establish a port authority autonomous from the federal government, working in the interests of Halifax

If Halifax followed that strategy, Booz Allen forecast, it would be handling 1,000,800 TEUs per annum by 2004.

Unfortunately, reaction to the report tended to focus less on the opportunity for Halifax than on the issue of port governance. Lost was a very positive vision of the port's future, one which, coincidentally, postulated a new and very exciting role for Shearwater.

Mercer Management Port of Halifax Study, 1997-98

Following the Booz Allen multimodal study, the Halifax-Dartmouth Port Development Commission undertook a "Vision and Action Plan for Container Traffic" in the summer of 1997. Background research and workshop facilitation was provided by Mercer Management Consulting of Boston. While no formal public report was ever released, the results of this effort were summarized in a submission delivered to the Canada Transportation Act Review by the Greater Halifax Partnership (2000). According to this summary,

Mercer painted a bleak picture if Halifax did not get its act together. According to these consultants, Greater Halifax's recent growth was largely driven by external factors and not by any inherent advantages of the port. It was therefore, they maintained, extreme-

ly vulnerable to external determinants. Mercer claimed that Halifax only had a strong position in the small Atlantic region market, and it was vulnerable everywhere else. With its closer proximity, Montreal was better able to serve markets in Central Canada, and Greater Halifax's market share had been declining as a result. Shipping lines very much view Greater Halifax as a discretionary port. Despite these disadvantage, in Mercer's view, the port had recently gained due to several external factors beyond its control: New York's draft problems, US shippers seeking to avoid higher rates, and the sudden rise of the so-called via-Suez trade for which Greater Halifax was ideally suited.

Mercer contended that Halifax faced threats on many fronts:

- with new carriers arriving, continued share loss to Montreal
- New York dredging from 40 to 45 feet by 2003 threatened FILO business
- improvements in US rail efficiency
- the weakening of the Trans Atlantic Carrier Agreement and expected US deregulation was expected to erode Halifax's share of the US market
- it was expected that the repeal of the US Harbor Tax would threaten US cargo shipped via Greater Halifax to avoid the tax

Mercer also accused Halifax of believing too long in its own propaganda - the worn out "deep water, great circle route and ice free harbour" cliché. Instead, they stressed the need for Greater Halifax to reinvent itself.

Mercer saw limited opportunities for growth:

- modest growth in the via-Suez trade
- modest growth from economic and trade expansion (in a world wide market that was growing at 7–8 per cent per annum!)
- limited potential to make large gains in market share from New York and Montreal for Europe–Mid-West trade
- limited opportunity to increase trans-shipment activity in the Northeast
- most growth expected to come from its core markets in Atlantic and Central Canada

The bottom line was that Greater Halifax had to significantly improve its cost and service position to its main inland markets. "Halifax needs to be not just as good, but much superior than New York or Montreal in its service and efficiency, to overcome its absence of a significant local market and its natural cost disadvantages to inland markets".



The workshop participants* agreed on the top three priorities for Halifax container traffic:

- protect existing cargo from threats
- prepare for modest short and mid-term growth
- explore new long term growth ideas

To achieve these priorities the workshop agreed to set five goals to be achieved within one year. They had a familiar ring to them, but were extremely pragmatic:

- move forward with unified leadership and cohesive management
- ease capacity constraints
- improve labour efficiencies and reduce costs
- improve rail efficiencies and reduce costs
- develop a more coordinated and focused approach to marketing

A working group consisting of the Halifax Port Corporation, CN, the two container terminal operators, and labour was appointed to move the agenda forward. It was to submit a business plan which would detail the specific steps to be taken and investment required. It was Mercer's recommendation to focus on short term "fixes" and the port's overall competitive position before contemplating a third container terminal at either Shearwater or Rockingham. It was good advice that went largely unheeded. To our knowledge the working group met only two or three times before events relating to the Maersk Sealand superport bid overtook the port's agenda.

* Participants included the Halifax Port Authority, Halifax-Dartmouth Port Development Commission, CN, Halterm, Ceres, labour, City of Halifax, Greater Halifax Partnership, Metropolitan Halifax Chamber of Commerce, Province of Nova Scotia and ACOA.

APPENDIX C: VOLUME AND MARKET SHARE TABLES

North Atlantic Container Traffic — U.S. and Canadian Ports — 1990–1999 (in TEUs)

Port	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990	% Change 1990-1999
Baltimore	498,108	486,861	476,012	474,816	534,556	530,643	487,772	468,938	465,491	474,301	5%
Hampton Roads (Norfolk)	1,306,537	1,251,891	1,232,725	1,141,357	1,077,846	894,066	786,023	846,256	855,219	788,760	66%
Boston	154,175	147,156	143,948	127,087	159,844	169,695	152,240	141,950	124,859	141,849	9%
Chester	N/A	N/A	82,000	39,000	37,400	32,738	32,246	17,550	24,683	42,275	N/A
New York/ New Jersey	2,828,878	2,466,013	2,456,886	2,269,500	2,262,792	2,033,879	1,972,692	2,014,052	1,865,471	1,898,436	49%
Portland (ME)	4,601	2,372	2,171	4,177	4,000	4,200	3,300	4,000	2,500	N/A	N/A
Richmond	41,950	43,994	52,145	52,873	42,934	42,489	41,213	40,642	37,206	36,372	15%
Wilmington (DE)	199,168	199,240	166,912	162,884	156,940	157,416	172,998	162,946	114,664	91,623	117%
Wilmington (NC)	133,926	112,980	105,786	103,579	104,038	98,867	110,425	106,786	83,651	92,720	44%
Philadelphia	216,991	233,728	112,588	95,086	107,094	108,832	117,057	113,293	66,745	65,309	232%
U.S. North Atlantic	5,384,334	4,944,235	4,831,173	4,470,359	4,487,444	4,072,825	3,875,966	3,916,413	3,640,489	3,631,645	48%
Halifax	462,766	425,435	459,176	392,273	382,575	311,097	300,933	302,377	357,276	447,250	3%
Montreal	993,486	932,701	870,368	852,530	726,435	728,799	596,120	537,256	575,554	568,103	75%
Saint John	48,417	42,720	42,898	37,202	30,867	28,424	28,366	15,757	14,462	15,684	209%
St. John's	88,049	88,812	85,665	83,983	78,676	80,803	77,318	73,864	78,391	89,539	-2%
Canadian North Atlantic	1,592,718	1,489,668	1,458,107	1,365,988	1,218,553	1,149,123	1,002,737	929,254	1,025,683	1,120,576	42%
Total	6,977,052	6,433,903	6,289,280	5,836,347	5,705,997	5,221,948	4,878,703	4,845,667	4,666,172	4,752,221	47%

Source- AAPA data



Percentage of North Atlantic Market — U.S. and Canadian Ports — 1990–1999

	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990
Baltimore	7	8	8	8	9	10	10	10	10	10
Hampton Roads (Norfolk)	19	19	20	20	19	17	16	17	18	17
Boston	2	2	2	2	3	3	3	3	3	3
Chester	0	0	1	1	1	1	1	0	1	1
New York/ New Jersey	41	38	39	39	40	39	40	42	40	40
Portland (ME)	0	0	0	0	0	0	0	0	0	0
Richmond	1	1	1	1	1	1	1	1	1	1
Wilmington (DE)	3	3	3	3	3	3	4	3	2	2
Wilmington (NC)	2	2	2	2	2	2	2	2	2	2
Philadelphia	3	4	2	2	2	2	2	2	1	1
U.S.	77	77	77	77	79	78	79	81	78	76
Halifax	7	7	7	7	7	6	6	6	8	9
Montreal	14	14	14	15	13	14	12	11	12	12
Saint John	1	1	1	1	1	1	1	0	0	0
St. John's	1	1	1	1	1	2	2	2	2	2
Canadian	23	23	23	23	21	22	21	19	22	24
Total	100	100	100	100	100	100	100	100	100	100

Source – AAPA data

APPENDIX D: EXAMPLES OF PORT CONSOLIDATION

Algeciras, Spain

Algeciras, located near Gibraltar at the entrance to the Mediterranean, was established as a pure transshipment facility by both Maersk and Sea-Land in the 1970s. In 1999, it ranked 22nd in the world, having handled two million TEUs, an increase of 9.1 per cent from 1998 and almost 25 per cent from 1997.

Maersk Sealand will consolidate the two companies' facilities into one that has a capacity of close to three million TEUs. During the period 1998–2002, the terminal is being expanded by the Algeciras Port Authority at a cost of US\$200 million, while Maersk has ordered three post-panamax cranes and six rubber-tired yard gantries, a total investment valued at over US\$30 million.

Algeciras has no hinterland; it exists merely as a pivot point for the convergence of Maersk Sealand's east–west and north–south services. “Algeciras fits the role of a north–south and east–west transshipment port [to] perfection [and the] the potential of calling at Algeciras is unmet” (Richardson 1998). Because of its location in the North Atlantic, Maersk Line used to describe Halifax as a “North American Algeciras”, with a major difference: Halifax also offered inland rail connections to the American heartland. Yet Algeciras has prospered, and Halifax has not. Algeciras has benefitted from the full commitment of both Maersk and its former rival and now fully merged partner, Sea-Land, which developed the port into a major transshipment hub.

Freeport, Bahamas

Located 65 nautical miles from the coast of Florida, Freeport, Bahamas, was built by the largest container-terminal operator in the world, Hutchison Port Holdings, to exploit Freeport's location astride several north–south and east–west trade lanes. Three years ago, Freeport handled less than 11,000 TEUs; in 1999, it was expected to handle over 750,000.

The terminal was designed to handle the largest vessels afloat, transiting the major east–west trade lanes, and transshipping cargo for the Caribbean and South America. In the words of one of HPH's executives, “The first thing that struck me was Freeport's position — a lot of trade lanes merge here” (Adams 1998). As a Maersk executive has observed, “Any combination is possible from here because you can reach any point in the world.”



Freeport Container Port is a joint venture between HPH and Grand Bahama Development Company, of which HPH owns 50 per cent. Phase I of this development cost US\$78.3 million. The facility's initial capacity was 560,000 TEUs, and it boasted four post-panamax gantry cranes. Expected additional improvements will include 366 metres of new quay, three additional post-panamax cranes, and 12 straddle carriers. The whole complex will comprise three berths of 915 metres, seven super post-panamax cranes, and 22 straddle carriers, with total capacity of 950,000 TEUs. The port's owners also plan to explore the feasibility of linking the transshipment terminal's operations to the nearby Freeport International Airport.

Florida's ports fear Freeport's impact, and many of them are gearing up with feeder services. Freeport's 47-foot-deep channel "beckons large vessels to transload containers to and from large ships that might ignore the largest US ports entirely and tie up where non-union port gangs and shortline railroads congregate" (Wilner 1999). Freeport is meant to be a deeper, cheaper rival to Miami, Jacksonville, and perhaps even Savannah. Its costs are significantly lower, with lift rates reportedly one-half what they are in Miami. There are no unions and few government restrictions, and HPH pays no taxes on its Freeport earnings. Present customers include Mediterranean Shipping Co. and Maersk Sealand, which, combined, account for 85 per cent of the port's throughput. Only four per cent is destined for the local market.

Gioia Tauro, Italy

One of the most phenomenal port developments in the world did not exist until 1995. Medcenter in Gioia Tauro, located in southern Italy, ranked 15th in the world in 1998. Occupying 185 acres, it has eight berths, 14 post-panamax cranes, 2,450 metres of quay length, with up to 15 metres of water alongside, and 3,000 metres of on-dock rail. In its first full year of operation, it handled 575,074 TEUs, a remarkable 75 per cent of which was handled in the last six months of 1996 (Cargo Systems 1999; Cass 1999, 209; Containerization International 1999).

Medcenter is owned by Contship Italia, formerly an Italian container line (now owned by CP Ships), in partnership with Ecklemann-Eurokai of Hamburg. It is a classic transshipment hub, located virtually in the centre of the Mediterranean. Recently, it was announced that Maersk Sealand would be granted a dedicated terminal area within the port, in return for taking a 10 per cent stake in the terminal-operating company. Additional cranes have also been ordered, which will bring the total to 20 ship-shore gantry cranes by the end of 2001.

The port was expecting a relatively modest five per cent increase in traffic for 1999 and is facing increased competition from several other Italian ports — both older ones, such as Naples and Genoa, and newer ones, like Taranto and Caligari. The port is now beginning to look beyond transshipment, which represents an estimated 65 per cent of its traffic base, to expanding its role as a gateway for Italy and southern Europe.

The Port of Los Angeles

A recent deal signed between the Port of Los Angeles and Maersk Line raises the bar for North American ports and is probably a portent of future developments. In November 1999, Maersk Sealand reached an agreement with the Port of Los Angeles to build an US\$800 million, 484-acre container terminal, the largest in the United States and one of the largest in the world. The port's revenue from the lease will reportedly total more than US\$2 billion over the 25-year life of the contract. The contract commits the carrier to a minimum annual throughput that will generate sufficient revenue to amortize the port's investment. Revenue in excess of the minimum will be shared with Maersk Sealand. The greater the volume of containers the carrier puts through its facility once the guarantee is met, the greater its share of revenue.

APPENDIX E: GLOBAL PLAYERS

Hutchison Port Holdings

James S. Tsien, executive director of the world's largest terminal operating company, describes the future as he sees it:

Looking ahead, global port operators will seek to expand their networks to meet the anticipated changes brought about by increases in the number of multimodal operators, mergers among shipping companies and the appearance of mega-lines operating 15,000 TEUs super-container ships and 4000-5,000 TEUs feeder vessels. The new global ports, constructed on existing or new sites (e.g. artificial islands), would guarantee large volumes and have move rates of 500 or even 600 per hour. They would also provide super-tanker-like drafts and advanced technology including information technology providing details on the location and status of cargo (Tsien 1999).

HPH Ltd., the world's largest port operator, is a division of Hutchison Whampoa Ltd., owned by Hong Kong billionaire Li Ka-shing. Hutchison Whampoa is a diversified conglomerate with holdings in property, retail, manufacturing, ports, telecommunications, energy, infrastructure, finance, and investment. It also owns the largest container terminal in Hong Kong, out of which grew its global terminal-operating company, HPH. From a Canadian perspective, Hutchison Whampoa is best known for its ownership of Husky Oil of Calgary and its development of the Expo '86 lands in Vancouver by its subsidiary Concord-Pacific. HPH currently operates in locations around the globe.

The rationale for the formation of HPH was a "direct function of globalization. In short, the globalization of trade and investment created a demand for standardized, speedy, low cost, reliable and integrated transportation systems. With advances in information technology making it easier to manage business across continents, coupled with the changing perception of ports as governments privatized them, the concept of a 'port' has changed" (Cass 1999, 230). From a carrier's perspective, they are able to negotiate multicontinent contracts with one terminal operator, spreading their commitments across several regions around the globe.

HPH apparently prefers complete ownership of a facility, although it will sometimes work with a partner. It also seeks long-term contracts. The company is said to be looking for new opportunities in Vietnam, North Korea, and South Africa. It is considered to be a truly global operator and is regularly approached by port authorities and governments looking for aggressive and innovative private-sector

terminal operators. Its stake in 17 ports now account for about 10 per cent of the world's container traffic (Barnard 1999). The parent company's port sector declared an operating profit of US\$399.7 million in 1997.

P&O Ports

P&O Ports is a division of one of the oldest shipping companies in the world, Peninsular and Ocean Navigation Limited, of London. Peninsular and Ocean is now a \$7 billion conglomerate, with interests in container shipping, bulk shipping, ferries, and cruise lines, having recently sold its construction and property-development business. Its cruise and conventional shipping operations are in the process of being separated into two distinct entities. Mainly centred in Australasia and the Far East, P&O Ports opened an office in London in 1998, so that it can concentrate on European and North American opportunities. It also recently purchased, for £50 million, ITO Corp., which operates terminals in many different U.S. ports, including Boston, Baltimore, Hampton Roads, Miami, New Orleans, Portland, and Searsport, Me. However, most of its new expansion is targeted for India, South America, the Mediterranean, and the Far East.

P&O Nedlloyd, a merger between P&O and Nedlloyd of the Netherlands, calls at Halifax as part of the Grand Alliance and is part of the P&O group of companies.

P&O Ports prefers one of three working arrangements, which it tries to establish with local port authorities:

- managing a facility on behalf of its owners
- leasing a facility from its owners
- purchasing a facility outright

Maersk Sealand

Maersk Line is the largest container-shipping line in the world. It is a division of the mostly privately held A.P. Moller Group of Denmark, which owns shipyards, oil fields and rigs, an airline, and supermarkets. In Denmark, the company is omnipresent. It is publicly traded on the Copenhagen stock market, but results are not divided by sector, so that it is very difficult to gauge the results of container shipping. In the past 10 years, Maersk has been relentless in the expansion of its shipping operations worldwide, by building bigger and bigger vessels, entering new trades such as South America, and the recent US\$800 million purchase of its former partner, Sea-Land.

In the words of Maersk's president, "You need to know about terminal operations to be an integral service provider; you are in a much stronger position to negotiate with third party providers because you already know the business; and the fact that you can do it yourself can be used as leverage. It is a strategic tool for Maersk to have this ability" (Drewry Shipping Consultants 1998, 51). The company has



operated its own terminals for many years, and its recent transaction with CSX Corporation to take over most of Sea-Land included the acquisition of a large number of North American terminals. (CSX maintained its overseas interests and continues to expand as a global terminal operator in its own right.)

Port of Singapore Authority

In the past couple of years, the Port of Singapore Authority has sought out new opportunities beyond its own huge operation in Singapore (over 14 million TEUs in 1998). It has invested in new terminals in China (Dalian, Fuzhou, Quinzhou, Tianjiang, and Minjiang), Indonesia (Ciading), India (Tuticorn), Yeman (Aden), Italy (Livorno, Civitavecchia, Gioia Tauro, and Genoa), Korea (Inchon), and Portugal (Sines). It is now considered to be a global terminal operator, bringing considerable skill and expertise to the task.

Stevedoring Services of America

Stevedoring Services of America is based in Seattle. It has operations mostly throughout North America, but it recently announced a US\$500 million project in Chittagong, Bangladesh. SSA was behind a proposed new terminal at Quonset Point, Rhode Island, that was, in the opinion of some observers, the “sleeper” in the bid for the Maersk Sealand superport sweepstakes in 1998–99 (see Appendix H). SSA was trying to develop a former 3,000-acre navy base on the shores of Naragansett Bay, across from Newport. Plans called for a terminal up to 515 acres, costing US\$700 million, with 7,000 feet of continuous berth, and 14 post-panamax cranes. The site is located adjacent to the Interstate 95 highway and within eight kilometres of a rail head. It is also less than a three-hour drive to New York City. If successful, SSA had expected the terminal would serve the whole northeast, including Atlantic Canada (by feeder) (QPD International 1996).

APPENDIX F: OPTIONS FOR A HALIFAX HUB TERMINAL

Rockingham Shore

As part of the competition for the Maersk Sealand North Atlantic hub (see Appendix H for a summary of this competition and its fall-out) a Halifax-based partnership proposed a new terminal for the shores of Rockingham. The partnership included the Province of Nova Scotia, the Halifax Regional Municipality, and the Halifax Port Corporation.

This US\$241–\$276 million project proposed to handle some 350,000+ containers annually. The terminal itself would have comprised a 1,200-metre quay, at least 100 acres of land and 8–12 post-panamax cranes. As the site was to be constructed adjacent to the existing rail bed, on-dock rail facilities and full intermodal service were envisaged.

The plan would have seen a purpose-built facility, owned by the public partners but operated by Maersk on a long-term lease arrangement. The active participation of CN in controlling costs and working with Maersk and the public partners would have been an integral part of any success. CN fully supported the idea of a megaterminal for Halifax but offered its own private-sector vision to Maersk Sealand as an alternative or supplement to the plan of the public partners.

Shearwater

The Department of National Defense is selling the former air base at Shearwater. This base could be developed privately as a next-generation post-panamax facility for the many shipping companies using 4,000 to 6,000 TEU vessels. There are over 150 such vessels afloat now, with at least 60 new vessels on order.

The Shearwater site includes about 2,000 metres of shoreline, from Imperial Oil to Autoport, enabling a phased development, with the first phase to include two post-panamax berths and a feeder berth, encompassing at least 150 acres, and 1,000 metres of quay — large enough to accommodate two post-panamax and one feeder ship, at least six post-panamax container gantry cranes, and having a total capacity of 600,000 TEUs initially

The Booz Allen Study of 1996 (see Appendix B) estimated this terminal would cost US\$375 million to build. Ancillary improvements to roads and the rail link would likely bring the price tag up to US\$425 million. The terminal is expandable, through two phases of additional development, to 2,500



metres of quay and at least 15 container gantry cranes on a 400-acre site with total capacity of at least 1.2 million TEUs. It is potentially a US\$1 billion project. There is no other site of its kind along the whole eastern seaboard of North America. It boasts rail access, it is near a major highway, and the site includes 2,500 acres of back-up land available for manufacturing, distribution, and warehousing. As well, of course, the site includes an airport facility. It has virtually unlimited potential for job creation and economic development for mainland Nova Scotia.

The terminal could represent only a portion of the whole Shearwater facility. The container-terminal development might serve as a catalyst for the development of processing, re-manufacturing for the North American market, and sea-air links. In the medium term, the Shearwater facility could also be developed as an intermodal terminal and serve as the Canadian FastShips terminal, a revolutionary new shipping technology which will be introduced between Philadelphia and Cherbourg, France, within the next two years.

APPENDIX G: EXAMPLES OF PRIVATE PORT GOVERNANCE

The United Kingdom: Going All the Way

Before privatization, U.K. ports had the worst reputation in Europe. They were inefficient, badly run, and at the mercy of the National Dock Labour Scheme (NDLS). The NDLS, established in 1947 by the Labour government, ensured that port workers had permanent jobs whatever the conditions or prospects at that port and that only registered labour could work as stevedores. This scheme burdened port owners with undesirably high manning levels and meant that port managers were rendered powerless to run their ports efficiently or profitably.

Privatization, combined with the abolition of the NDLS and changes in the labour laws in the 1980s, brought great gains in efficiency, productivity, and profitability through stronger management, improved customer service, higher levels of capital investment, and a better-motivated workforce. The United Kingdom's ports are now considered among the best in the world (Associated British Ports Holdings 1999). They also represent the few examples of total privatization in which all aspects of the running of a port have been placed in private hands.

The former Conservative government of Margaret Thatcher initiated the port-privatization process in the United Kingdom in 1983, when 20 ports formerly owned by the British Transport Docks Board were reconstituted as Associated British Ports (ABP), and shares were subsequently sold to the public. ABP Holdings is now a publicly traded corporation with a market capitalization of around £1 billion and turnover in excess of £339 million. It owns and operates 23 ports in five regions that handle 25 per cent of Britain's sea-borne trade, totaling some 122 million tonnes of cargo.

There is a general recognition now in the United Kingdom that a port can be bought and sold, like many other companies, without negative effects on the public good. The port of Felixstowe, for example, it has had five different owners during the past 30 years. It is now owned by Hutchison Westports Limited, a subsidiary of Hutchison Port Holdings, which also owns Thamesport, near London, and Harwich, further north, which it bought in 1998. This connection to a global chain has been of great benefit to Felixstowe. The Felixstowe Dock and Railway Company was acquired by Hutchison in 1991 for £80 million. Since then, its growth in container handling, in both overall tonnage and market share has far outstripped its two U.K. rivals, Southampton and Liverpool, which are managed by different variations of the privatization theme.



Corporatization — the New Zealand Experience

The form of privatization that took place in New Zealand has been characterized as more “corporatization” than privatization (Ircha 1999, 113). Until 1988, New Zealand had 16 ports which were operated by harbour boards. There were varying kinds of port authorities, ranging from the “tool” port model to the more “comprehensive” model in which the port authority provided all services within the port, including labour. New Zealand’s port industry, like those in many other jurisdictions, became hamstrung by increasingly militant and inflexible labour practices controlled by the Waterfront Industry Commission (WIC).

In 1988, the government legislated that the harbour boards had to separate their commercial-port operations from all other public activity. They then had to decide upon a value for the port company and allocate a share capital value for the company. The new port company would henceforth pay rates, taxes, and dividends to its new shareholders, namely the “restructured” regional or district councils that covered the natural hinterland of the port. In the second step, the WIC was wound up. Labour was henceforth employed directly by the stevedoring company on an as-required basis, much as it is in Halifax. A new Employment Contracts Act allowed unionized and nonunionized stevedoring companies to vie with each other in open competition.

A decade after privatization, New Zealand’s ports are posting major gains in productivity and earnings. While a mere US\$6.8 million was raised from the privatization of New Zealand’s ports between 1985 and 1997, total cargo now handled at the largest port (Auckland) is twice what it was before privatization, even though the number of employees is a third of what it used to be. Moreover, and perhaps more importantly, the turnaround time for ships is less than half what it used to be, having been reduced from 38 hours to 15.5, despite the fact that each ship is handling twice as many containers as it was 10 years ago. The reduction in the number of dockworkers resulted in each worker handling six times the cargo that used to be handled prior to privatization, with a concomitant 50 per cent reduction in cargo-handling rates (Corben 1999).

However, port reform in New Zealand has recently stalled: “Most local authority owners have been reluctant to divest their shareholdings or merge with other port companies...most councils have treated the businesses as cash cows” (Kerr 1998). Complete industry privatization has not taken place, nor has significant port rationalization taken place among the 14 ports in New Zealand. Local government ownership is inefficient, since it prevents rationalization and specialization. New Zealand’s business leaders agree that the country needs to go the extra mile and complete the privatization process. Both New Zealand and Canada might learn a lesson from the United Kingdom.

Commercialization in the United States

In the United States, eleven different types of port system have been identified (Cass 1999, 215). These

include ports which are departments of the city (Los Angeles and Long Beach), state agencies (Hawaii and Maine), and bi-state authorities (New York and New Jersey). Many ports, such as the Virginia Port Authority (Virginia International Terminals Inc.), Maryland Port Administration (Maryland International Terminals Inc.), and the Tampa Port Authority (Tampa Bay International Terminals Inc.) have been “commercialized” with the use of quasiprivate operating subsidiaries.

It is important to recognize that, despite this myriad of management systems, and in the absence of contemporary port reform matching that occurring elsewhere, U.S. ports remain among the most competitive and efficient in the world. A series of factors have been identified that give U.S. ports a competitive advantage: *

1. U.S. ports “reflect a variety of governance structures, primarily at the local, state and bi-state levels. There is no national ports plan or strategy as the American Constitution limits federal activities in ports.” In fact, “by the mid-1970s, local governments owned an estimated 70 percent of public port facilities.” The U.S. process has the advantage of “maintaining local autonomy of port authorities allowing them to compete successfully.”
2. U.S. ports “enjoy some degree of autonomy from local politicians and democratic controls, raise the bulk of their capital funds in the municipal bond market, and profess to behave in a non-partisan and business-like manner.” “The majority of U.S. ports operate as a landlord system – where the port authority owns (or has possession of public) waterfront land and facilities leased on a long-term basis to private operators.”
3. “All U.S. public port authorities receive public subsidy in some form including: direct funding from the port’s parent government, tax supported obligation bonds, direct taxation levied by the port authority, taxes levelled by the local government in support of the port, exemption from taxation (local government property taxes and federal taxes on port income) and, indirect subsidies by a variety of non-charged services provided by the parent government.”
4. U.S. ports operate under “a community utility approach where the port [is] viewed as a foundation for the commercial development of both the city and its region. Economic impact continues to be a dominant theme in justifying U.S. port expenditures.” “U.S. ports continue to be efficient enterprises despite their multitude of organizational approaches and institutional structures as their focus remains ensuring and promoting cargo throughput. Their enterprise approach, emphasizing local autonomy and supporting economic development, allows U.S. ports to compete vigorously with each other and with their Canadian counterparts.”

* Much of this section is adapted from a work in progress by Michael C. Ircha, “North American Port Reform: The Canadian and American Experience”, which Professor Ircha has graciously provided to AIMS in draft form for reference. The draft is being prepared for publication in *International Journal of Maritime Economics*, the revision referenced is dated December 2000.

APPENDIX H: MAERSK SEALAND SUPERPORT PROPOSAL

In the context of expanding international trade and Halifax's shrinking market share, the invitation from Maersk Sealand to put in a proposal for its new post-panamax vessels should have been a wonderful opportunity for Halifax. Instead, it crystalized the shortcomings of the currently dysfunctional relationship between the many stakeholders in the port of Halifax.

During the past three years, Maersk Line has introduced two new series of post-panamax vessels: the *Regina Maersk* class and the *Sovereign Maersk* class, which have capacities of 6,000 and 6,600 TEUs, respectively. In the summer of 1998, the *Regina Maersk* visited a number of ports on the east coast of North America, to demonstrate the company's commitment to introducing new, larger vessels to the trade and to urge port authorities to get on with upgrading port facilities to accommodate it.

In the late spring of 1998, Maersk Sealand asked Halifax and six U.S. ports — Boston, New York, Philadelphia, Baltimore, Norfolk (Virginia) and Quonset Point (Rhode Island) — to submit proposals to become its hub port on the east coast of North America. The request for proposal (RFP) called for one terminal capable of handling 550,000 moves per year (or around 750,000 TEUs), with a 1,800-metre quay wall lined by 12 post-panamax cranes. The potential job impacts were enormous, with up to 12,000 direct jobs being created.

New York Proposal

The winning New York proposal consisted of a 350-acre facility capable of handling 700,000 containers per annum. It also includes a massive, U.S. \$800 million dredging project to be carried out by the U.S. Army Corps of Engineers over the next 10–15 years. New York will consolidate both Maersk and Sea-Land's existing terminals by expanding the latter.

Despite having submitted the winning bid, the Port Authority of New York and New Jersey (PANYNJ) was not all that happy to be the winner, because it fears that the balance of power is shifting to the huge multinational carrier alliances. Like Canadian ports, many U.S. ports are more concerned with control than with business. "Consolidation in the ocean shipping industry has affected the distribution of trade volume between carriers and ports," said PANYNJ's Desmond Tamaki (1999).

Halifax Proposal

Halifax proposed a US\$241–\$276 million project, at a site along Rockingham Shore. It assumed that more than one port would be chosen, and proposed to handle only 350,000+ containers annually, rather than the full 550,000 asked for in the RFP. The terminal itself would comprise a 1,200-metre quay, at least 100 acres of land and 8–12 post-panamax cranes.

The Halifax proposal included feeder options along the east coast, as well as the potential offered by the then-impending merger between CN and Illinois Central, conceivably giving the carriers access to all of NAFTA. While its risk-sharing financial model was a definite strength, a major weakness of Halifax's proposal was that it was contingent upon government financing.

After the project was taken over by the Nova Scotia Department of Finance's Special Projects Group, it enjoyed only lukewarm support from the Halifax Port Corporation. The federal government was more worried about the proposed terminal's impact on the port of Montreal than attracted by the huge benefit the terminal would provide to Halifax. At almost the same time, it announced a C\$26.5 million investment in the port of Quebec.

The reaction of the provincial government and the port authority to the awarding of the Maersk Sealand superport to New York was to claim a moral victory, stating the whole process “put Halifax and Nova Scotia on the map” and to strike a new committee to move forward the process. But moral victories pay no bills, and neither the port nor the province is any farther ahead than it was before the Maersk Sealand process began. The fractious nature of Halifax port politics remains a fact of life, and most of the issues identified by prior port studies have not, as CN's Paul Tellier, noted in his speech to the 1999 Port Days banquet (Tellier 1999), been adequately addressed. Tellier said that the Maersk Sealand process was a wake-up call: “In the end, a deepwater port and efficient rail service to the interior were not enough to win the contract.” He also called for leadership, a new state-of-the-art, multi-user terminal, and flexible work rules for labour.



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