8th WCTR

CONTAINER PORT DILEMMA ON THE U.S. EAST COAST: AN ANALYSIS OF CAUSES AND CONSEQUENCES

N. SHASHIKUMAR
Professor and Department Chair
Loeb-Sullivan School of International Business and Logistics
Maine Maritime Academy
Castine, ME 04420, USA

Abstract

Container ports on the U.S. East Coast find themselves in a deep predicament. The shift in balance of power to their clients—the liner operators—has forced them to make massive investments of which some have been controversial. The author analyzes the causes and consequences of this extraordinary competition between container ports on the East Coast. The ongoing expansion plan in the Port of Charleston, South Carolina is used as a case study to highlight the issues. The author suggests a conservative approach to further port expansion that would best suit the needs of similarly situated ports and local residents.

INTRODUCTION

Seaports are an unavoidable subsystem within the transportation system. They are vital transportation nodes, and facilitate expeditious interchange of cargo between the deep-sea ships and the traditional domestic modes such as trucks, trains and barges. However, seaports are in an unenviable position when it comes to pro-active management of their business. To begin with, they are immobile unlike the assets of their ship-owner clients. Furthermore, they are often at the mercy of changes happening within the parent system, and forced to play a reactive role. As a result, a seaport seeking sustainable competitive advantage over competing ports must adapt to the changes faster which in turn requires aggressive marketing besides making higher and higher capital commitments. Yet, while, given the dynamics of contemporary port competition, there is always the risk of being overly optimistic in pursuit of a "build it, and they will come" philosophy.

The U.S. East Coast provides an interesting snapshot of container port competition. The long coastline and its sophisticated intermodal links are a logistician's dream-come-true. The entire coastline is densely populated besides being close to many wealthy cities and population centers. Then, there are a number of ports run by highly competitive state port authorities that presently strive for exalted load center status. Furthermore, to the north are the Canadian ports of Montreal and Halifax both of which would like to attract cargoes to and from the U.S. heartland through their facilities. Virtually all the major East Coast ports are undertaking ambitious expansion plans and imaginative promotional campaigns ("North American," 1997). Yet, at the same time, increasing questions are being raised not only about the rationale for some ongoing capacity enhancement programs but also the very basic notion of seaports being the drivers of regional economic growth. This paper will scrutinize the competitive ramifications of containerization and intermodality on the U.S. East Coast seaports. It will analyze the current market conditions and postulate future trends based on available current data, and propose a conservative approach in contemporary port development.

SECTORAL COMPETITIVE DYNAMICS

Containerization provided the possibility of consolidating cargo at a handful of ports along arterial trade routes. This was essential for the liner operators to achieve economies of size. Calling only at those ports that offer large volumes and the best technology facilitated the rapid turnaround of their expensive container vessels. The possibility of restricting mother vessel ports of call to only the major load center ports became a principal threat for other ports who would then be relegated to an inferior status and served only by a network of feeder vessels. In the race for survival that ensued, all major ports on the U.S. East Coast made large investments to cope with the demand for rapid cargo movements. While the load center nightmare anticipated by ports did not materialize--at least to the magnitude expected--what really resulted was the intensification of competition between ports in the same region (all of whom had invested in competing technology and infrastructure to attract the deep-sea liner operators). Thus, intra-regional port competition between ports in the same region such as the U.S. East Coast or the West Coast or the ports in Western Europe became very severe subsequent to the introduction of containerization. The aggressive terminal capacity expansion programs of all major seaports on the U.S. East Coast and the promotional wars between directly competing ports such as Baltimore and Hampton Roads or Charleston and Savannah illustrate this very clearly.

Unfortunately for the ports, before they could complete their huge infrastructure investments to facilitate containerization, further exogenous changes were thrust upon them (e.g., see Hayuth 1987, p.65). While the inability of conventional break-bulk shipping to meet the demands of

expanding international trade led to the technological revolution of containerization, the 1980s witnessed a transportation revolution of even more significance called intermodalism. This resulted from the shippers' and carriers' recognition of true benefits of containerized cargo movements in terms of uninterrupted container movements to the interior points. Container terminals began to be viewed as a node in the supply chain and anything but a terminus! However, the facilitation of door-to-door intermodal cargo movements requires the elimination of all bottlenecks, and a smooth and uninterrupted cargo flow through the port subsystem. Ports with excellent road and rail connections thus became the natural choice for intermodal hubs and gateway port status. This is because using a through bill of lading for the door-to-door movement would leave the choice of port to the intermodal operator. Thus, the traditional ties between the shippers of a region and their home-ports have become less sacrosanct while pursuing intermodal efficiency. The operators choose ports ideally suited to implement their intermodal strategy. A direct consequence of this has been the demise of the traditional hinterland and foreland relationships of a port and the blurring of the port's shipper base.

The ports that did not have efficient road and rail links for high volume container movements to the interior points or to the other coasts had to build those options to remain viable competitors. Thus, while containerization intensified the competition between ports on the U.S. East Coast, intermodalism took competition to an even higher level. The introduction of inter-regional competition besides the intra-regional competition has caused dramatic shifts in the traditional cargo flows. A good example of this is the fate of all-water cargo movements to and from the East Coast of North America, and the Far East and Japan. In the mid 1980s, ports on the West Coast of North America were increasingly handling such cargoes, with minibridge services providing the inland move. Subsequently, Neptune Orient Lines, a Singapore-based operator introduced a new, fast service through Suez Canal; ironically, a trans-Pacific movement that does not transit the Pacific Ocean. Other major operators soon duplicated this, firmly establishing a new route for Asian imports into the U.S. However, major operational and structural changes in liner shipping sector soon clouded the optimistic expectations of container ports on the East Coast.

From an operational perspective, the size of container ships began to increase dramatically in the mid-1990s. A newer generation of vessels whose size has now crossed the 6,000 twenty-foot equivalent units (TEU) mark has eclipsed the top-of-the-line, fourth generation container vessels that carried 4,000 odd TEUs. A recent analysis found that the new K-class Maersk Line container ship breaks-even at 46 percent of the breakeven freight rate of a 4,000 TEU panamax vessel (Phillips 1996). While size economy strategy is good for the overall efficiency of the supply chain, what lies in it for the liner operator is uncertain at best. It has been argued that this is a futile strategy when used solely on its own (Shashikumar 1996). Despite that, forty-seven such vessels were on order as of 1 January 1997 (Clarkson 1997). The larger container vessels pose new problems and challenges for ports. To begin with, not many of the U.S. East Coast ports have the draft or the maneuvering room to accommodate the bigger vessels. Even if there were no such physical limitations, the U.S. East Coast ports would find themselves unable to handle vessels of such size with the existing technology. Furthermore, the size of the sudden upsurge in the container volumes will be nightmarish for many ports. Undoubtedly, all these would necessitate another round of capital investment to remain among the top tier of container ports.

The impact of the operational change discussed above becomes even more prominent when one also takes into account the coincident structural changes in liner shipping markets. In the early 1990s, the operational strategy of top tier liner operators shifted dramatically from one of vertical integration to that of horizontal integration. The horizontal integration strategies of mergers, consortia formation and joint service agreements were perceived as early as in the late 1960s (UNCTAD 1970). By rationalizing operations through one or more of the horizontal integration

mechanisms, liner operators seek better utilization of resources and cost reductions. While the British and other West European shipping lines resorted to asset sharing, U.S.-based shipping lines avoided such activities to maintain their operational freedom. The American companies resorted to various in-house techniques to control their costs rather than entering consortia and other cooperative working arrangements. By the early 1990s, it became painfully clear to liner operators that individual cost-control measures could only go so far and that further savings may need greater cooperation. This led to a literal explosion of strategic alliances in liner shipping (Fossey 1994, Damas 1996, Phillips 1996). Operators look for the ideal partner with whom to combine their resources in the most effective manner whether those be ships, port terminals or sailing schedules. These operators look for overall cost savings by carefully streamlining their joint services. The potential for sharing encompasses containers, chassis, equipment and terminals, feeder vessels, as well as providing land-based intermodal services. Through their alliances, liner operators stand to gain an overall increase in their operating efficiency and some monetary savings that they could pass on to their customers. The market responses to these alliances have been far from muted acceptance (Kadar 1996, Berzon 1996). Furthermore, dissatisfied with the difficulties of coordinating the joint services of a potpourri of strange bedfellows, some liner operators have gone a step beyond toward outright mergers with suitable partners. The merger between the British-based P&O and the Nedlloyd, based in Holland, and the recent acquisition of American President Lines by Neptune Orient Lines of Singapore are examples of this. Prior to the mergers, Nedlloyd Lines, P&O Containers, American President Lines and Neptune Orient Lines occupied the 8th, 11th, 18th and 19th ranks among the top twenty operators (Containerization International 1997). The Nedlloyd-P&O merger created the third largest operator in the world and the APL-NOL merger, the seventh largest. The merged entities will exercise greater clout with their improved market position. Furthermore, as operators listed in the above mergers were members of competing liner alliances, the mergers also brought about certain amount of suspense and drama into the continued existence of the two biggest carrier alliances prior to their later realignment.

Another significant structural change is taking place in the liner shipping industry that will have a lasting impact on U.S. container ports. This refers to the gradual withering away of the conference system and the impending deregulation of the liner sector (Shashikumar 1997). Contrary to the blast of deregulation that affected all other modes of transportation in the U.S. during the late 1970s and the early 1980s, the U.S. Shipping Act of 1984 (which replaced the original Shipping Act of 1916 as amended in 1961) only partially deregulated liner services (Shashikumar 1987). It made the Federal Maritime Commission, the regulatory agency, more powerful unlike the Civil Aeronautics Board and the Interstate Commerce Commission, its defunct transportation siblings that have ceased to exist. Meanwhile, shippers' historic opposition to the antitrust immunity of liner operators began to gain further momentum. Much to the agony of conferences, the European Competition Directorate, DJ-IV, also began to pursue a high activist policy aimed at controlling the power of liner conferences (Ruttley 1995). It is rather ironic that these attempts are taking place at a time when the market power of conferences is at its lowest level in recent years (Shashikumar 1993). However, the current U.S. Congress is acting on reforming the 1984 Act ("Shipping Act Reform," 1997) that would further deregulate the liner sector. The port sector has reservations about reducing government oversight and transparency as they anticipate it would lead to an even greater concentration of power among the top carriers ("Lott Pushes," 1997). The port industry is concerned about the transition of the traditionally quasi-common carrier liner industry to one where contract carriage (through confidential service contracts) might become the norm.

HOW MANY LOAD CENTERS ON THE U.S. EAST COAST?

There was a time when handling an annual volume of 250,000 TEUs would have elevated a facility to exalted load center status (Hayuth 1981). Designating load center status based on the number of containers handled is transitory at best. What may be a record number handled today becomes the average tomorrow because of increasing globalization. Interestingly, today's top container ports like Hong Kong and Singapore handle about 250,000 TEUs a week. Marti (1988, p.58) defines a load center as a "carefully selected port that a steamship line uses, while simultaneously deleting calls to other regional ports," or "a large container port based on aggregate twenty-foot equivalent units". Marti (1988, p.59) also postulated and successfully tested the existence of three levels of load center ports, namely:

- medium sized ports that control regional exchanges
- large international load centers that dominate world trade
- smaller facilities that influence national commerce.

An UNCTAD report (1990) went a step beyond and defined the criteria for hub ports as well as load centers. They define a dedicated hub port as one situated at the intersection of main sea routes or at one end of such routes at a place where the main flow of container traffic splits into feeder flows to and from ports of neighboring areas. A load center, according to the UNCTAD report, has substantial centrality and accessibility to hinterlands. Hayuth and Fleming (1994) provide a more polished approach toward defining load centers. They use the concepts of centrality and intermediacy to characterize those container ports that are strategically located and naturally endowed to be load centers.

Centrality refers to the port's own business base, i.e., the containers originating and/or terminating in the port's natural hinterland. Intermediacy refers to the port's ability to capture incremental cargoes that may typically be transshipment cargo or, perhaps, in-transit for an intermodal movement. The incremental traffic is stimulated because of the port's ability to attract one or more top tier carriers to their container terminals. It can only happen when a port has adequate facilities and the infrastructure to provide an efficient level of container handling. Hayuth and Fleming stop short of stating that centrality is the principal factor in gaining the load center status (1994, p.192). They do observe that ports like Seattle are more dependent on their intermediacy than their centrality. However, centrality arising from the location advantage of a hinterland with significant economic activity either as a center of consumption and/or production is truly the dominant factor in determining a load center location. Intermediacy, as rightly noted by Hayuth and Fleming (1994, p.189), can shift rather dramatically as illustrated by the continuous poaching of one liner operator or the other by competing container ports the world over. What takes precedence is the strategy of the liner operator. Once that is done, the choice of port, especially when unencumbered by the centrality issue is elementary for the liner operator. The ports with similar intermediacy have no reason to rejoice over any of their top tier liner client for those relationships can and most likely will change when another port in the region offers a better deal.

The debate on port competition and load center status received a fresh outlook with Heaver's argument that container terminals rather than ports are the major focus of competitive strategy today (1995, 127). He postulates that competition between terminals and ports and the logistics systems of which they are a part is beneficial, and contributes to the overall efficiency of the supply chain. He makes a case for commercially sensible port policies which he thinks would preclude ports from being at the mercy of liner operators (1995, 130). It is questionable if that alone would alter the status quo and swing the balance of power in favor of the ports. The recent decision by Maersk and Sea-Land to seek bids from all leading North Atlantic container ports for a mega-terminal to serve as the principle U.S. East Coast port for their global partnership is a good

illustration of the container operators' market power over the ports. However, shifting the focus to container terminals rather than ports is a significant new trend.

Table 1 - Projected Characteristics of A Mega-Ship Container Terminal

Acreage	150
Berths	2 @ 1,250 ft for mega-ships 3 @ 1,000 ft for mixed vessel sizes
Cranes	6-10 Beyond Post-Panamax Size Cranes
Water	50 ft Channel/Berth Depth 800 to 1,000 ft Channel Width 1,430 to 1,650 Turning Basin
Projected Yearly Gate Throughputs	450,000 TEUs/Yr. Minimum (3,000 TEUs/Acre) 900,000 TEUs/Yr. Maximum (6,000 TEUs/Acre)
Rail Connections	On-Dock or Adjacent Intermodal Railyard 2-4 Unit Train Calls/Day (40% intermodal split)
Typical Daily Truck Traffic	1,730-3,460 Trips/Day (40% intermodal split) 2,880-5,770 Trips/Day (0% intermodal split)

Source: VZM/TranSystems as cited in U.S. Dept. of Transportation (1997)

There is a forecast that by the year 2010, post-Panamax vessels in the 4-6,000 TEUs range will handle 30 percent of all U.S. containerized cargoes and the 6-8,000 TEU range will handle another nine percent (DRI-McGraw Hill, U.S. DoT 1998, 35). However, there is a prerequisite for this to happen and that is the availability of the right port and terminal infrastructure to handle the larger vessels. Table 1 shows the estimated port and terminal infrastructure required for handling large post-Panamax vessels. In addition to huge investments in new cranes, the terminals will need deeper approach channels and berths with a depth of 50 feet, and larger turning basins. Correspondingly, these ports and terminals will need expeditious intermodal linkages to interior points that would facilitate the rapid movement of containers by both rail and truck. This would take the form of on-dock or adjacent rail loading provisions and dedicated truck corridors such as the Alameda corridor in Southern California. There are presently only three ports or terminals on the entire Eastern Atlantic seaboard that have a berth depth of 45 feet or more.

It is noticeable that not even one U.S. East Coast Port falls within the top ten league of premier container ports. The Port of New York and New Jersey, the busiest of the U.S. East Coast container ports, is only the 13th leading container port globally. However, the port's relative position on the East Coast is understandable and well explained by the centrality and intermediacy yardsticks. The port has nine principal container terminals and serves a dynamic commercial region and a huge population base. Besides the large number of containers that begin or end in its commercial region, it has steadily increased its intermediacy factor with significant gains in rail intermodal cargoes ("New York/New Jersey's Steady Year," 1997). It appears that Marti's three-tier classification of container ports is very appropriate for the East Coast, with NY and NJ alone being in the top tier. The Port of NY and NJ is followed in terms of the number of TEUs handled by Hampton Roads, Charleston, Port Everglades, Miami, Savannah and Jacksonville. These ports comprise a highly competitive second tier and are similarly situated in terms of centrality as well as intermediacy. Given the relatively low centrality of all these ports, except perhaps Miami, all of them pursue new clients aggressively besides making new capital investments. Furthermore, these ports are geographically close to each other in the South Atlantic region of the U.S. East Coast, unlike the U.S. West Coast where the major container port regions are separated by long distances, with each region having its own unique strengths. As a result, while New York and New Jersey will remain as the top choice for those calling the East Coast, the choice of a natural second or a

third port of call does not arise. Hampton Roads and Charleston have broken well ahead of the rest and established themselves as a possible second and/or third port of choice. However, these choices are far from permanent.

CONSEQUENCES OF THE COMPETITION FOR LOAD CENTER STATUS

Virtually all the top container ports on the U.S. East Coast are undertaking ambitious expansion plans so that their peers do not outdo them. It is not surprising that capital expenditure for specialized general cargo facilities accounted for 28.8 percent of the total expenditures in 1995 (U.S. Port Development 1997, 5) of which the share of the South Atlantic ports alone was 23.9 percent. A survey of proposed capital expenditures for 1996-2000 showed that specialized general cargo facilities will continue to be the leading category with $2.7 billion (44.8 percent of the total) (U.S. Port Development 1997, 11). Of this, the South Atlantic region's share will be $613 million (22.7%). The figures for 1996-2000 do not include the expansion plans of the South Carolina State Ports Authority and the Port of Palm Beach as they did not respond to the 1996-2000 survey. The list of top ten U.S. port authorities in terms of total capital expenditure for the period 1996-2000 includes four port authorities from the East Coast and are shown below in Table 2.

Table 2 - Reported U.S. East Coast Port Expansion Projects, 1996-2000

Rank	Port Authority	Expenditures ($)
4	Georgia Ports Authority	447,303,000
6	Port of NY and NJ	231,302,000
7	Port of Miami	203,275,000
8	Port Everglades	197,932,000

Note: South Carlina State Ports Authority did not respond to the survey
Source: U.S. Port Development Expenditure Report, Table 10 (1997)

The Port of Charleston will reportedly spend $300 million in the next five years on the first phase of its expansion plan in Daniel Island ("Expansion Plans," 1997). This alone should put the South Carolina State Ports Authority in the fifth position, ahead of New York and New Jersey. Apart from all these, the Virginia Port Authority has embarked on a $334.8 million 2010 plan (Menon 1997) and Jacksonville, Florida has secured a $100 million five-year capital improvement plan ("North American East Coast Ports," 1997, 33). It is interesting that all this is happening at a time when public institutions overall are being held to a higher degree of accountability and cost control.

Even though ports' desire to build new facilities to attract liner operators is understandable, one wonders why they do not realize the consequences of their ambitious expansion plans. The philosophy of their expansion programs has been compared to buying a very expensive lottery ticket in anticipation of hitting the jackpot (Slack 1993). While port rates are not the sole criteria by which carriers or carrier alliances make their port choices, they could truly become instrumental when there is very little to choose between the ports under consideration. Such price competition is already happening on the U.S. East Coast (Baldwin 1996). A good reason for this among container ports is that the liner operators themselves are experiencing poor financial returns because of endemic over-tonnaging and severe competition in the marketplace. Thus, given their relative absence of centrality, and the transferable nature of intermediacy factors, the container ports in the

South Atlantic region in particular could be uniquely harmed through their over-ambitious capital expansion programs.

Traditionally, port developers justified capital investment plans with arguments supporting regional or local economic growth. However, various authors have questioned the existence of significant multiplier effect through port development because of the contemporary trends in liner shipping (Goss 1990). The four justifications given for this argument are:

- Because of intermodal movement of cargo to interior points, true benefits of port expansion or improvement often "leak" to those located inland. The container ports in particular do not employ a large number of people in cargo handling or in auxiliary operations as was the case in general cargo operations before containerization, and they are no longer the engine that drives regional economic development.
- An enhancement in the efficiency of a port only adds to the competitive advantage of foreign exporters over that of domestic producers. This could especially worsen the situation for a nation with a basic trade deficit.
- Public assistance for port development, through direct or indirect taxation, will add to taxpayers' burden and make the region less attractive.
- Despite the increases in global trade, an expansion at any one port will often be at the expense of other ports in the same region.

Other arguments often made against port development include loss or deterioration in quality of life, and environmental issues that include the release of foreign ballast water in pristine domestic waters (Bartelme 1997). Gripaios and Gripaios (1995) analyzed the Goss' thesis in the case of the British port of Plymouth and made a convincing argument that the role of port development and expansion in regional economic growth is an exaggeration. Does this mean that ports should not develop and/or expand their facilities? Such an outcome is not being suggested at all. Seaports will remain as a major logistics support center for the foreseeable future. They must keep up with the times and the logistical needs of their clients, and add value to the global supply chain. However, merely building facilities anticipating intermediacy-based future trade and antagonizing the local residents is hardly the right strategy. Given the current market dynamics and the changing role of ports in national and regional economy, ports must adapt. Nevertheless, as argued by Haynes et al (1997, p.99), it must be done by working with a wider community and not just the carriers. They postulate that successful ports of the future will be those that work with their city and develop an interdependent strategy for economic integration (1997, p.100). The Port of Charleston and the South Carolina State Ports Authority is presently embroiled in a classic example of controversial port development, causing deep anguish among some local residents and is discussed next.

THE CHARLESTON CONTROVERSY

As containerization began to mature, the mid-South Atlantic region witnessed severe competition between the neighboring ports of Charleston and Savannah. This was a natural outcome as the two ports are somewhat identically endowed in terms of centrality and intermediacy factors, and are situated relatively close to each other. The port of Charleston gradually established its superiority in container volumes as years went by and presently handles almost twice as many containers as Savannah. The Port of Charleston has performed consistently well as a medium size container port. However, in 1996, Hampton Roads in Virginia displaced Charleston from its status as the second busiest container port on the U.S. East Coast. Anticipating such competitive threats and the shifting carrier demands, the South Carolina State Ports Authority has proactively pursued port

development activities. Such measures include improving facilities at the Columbus Street Terminal and the North Charleston Terminal. They completed the new Wando Welch container Terminal in 1995 although some minor extension programs are still under way ("Expansion Plans," 1997). The Port is deepening its shipping channels to 45 feet besides investing in state-of-the-art container handling and information technology, and other improvements. Furthermore, the Ports Authority purchased 825 acres on the Cooper River side of Daniel Island in 1992--reportedly at a cost of $7 million--to build its mysterious Terminal X (Bartelme 1995). Several interest groups including the harbor pilots and the Maritime Association of Charleston--a body that represents seventeen different port industry groups--contested the choice of Daniel Island. They wanted Terminal X to be built in the disused Charleston Naval Base facility. The naval base redevelopment group--Building Economic Solutions Together (BEST)--conducted a million-dollar study that suggested that one could build a container terminal on the former Naval Base faster than at Daniel Island (Hassell III 1995). The State Ports Authority, which had already purchased land on Daniel Island, agreed to consider the option under the right circumstances (Hassell III 1995). However, the Redevelopment Authority (RDA) did not approve of such plans for the disused Naval Base despite having 1.7 miles of deep-water frontage. Curiously enough, they set forth provisions for building a commercial shipyard--an industry that is almost on its deathbed in the U.S.--over there. Despite repeated attempts by the Maritime Association, the RDA did not even give them an opportunity to present their arguments (Bartelme 1995). Thus, rather than reusing an industrial site that had good deep water frontage, the State Ports Authority opted for building the new terminal on an undeveloped site and causing significant friction among some residents of the region.

In early 1997, the State Ports Authority announced its decision to buy another 506 acres--at a cost of $6.8 million--on the Wando River side of Daniel Island (Baldwin 1997). The proposed new 350 acres port expansion plan on Daniel Island has added fuel to the fire still smoldering from the State Ports Authority's earlier port development plan for the Island. The reported justification for the new acquisition is Charleston's potential to become a major transportation hub on the East Coast (Bartelme 1997). Other reasons suggested include the need for terminals that can handle the latest generation of post-Panamax container vessels and the absence of on-dock rail facilities in existing terminals in the port (Groseclose Jr. 1997). The present proposal also includes building a 55-acre park at the southern end of the island, sandwiched between two 21st-century container terminals. Residents opposed to the development are keen on keeping the Wando River--Charleston's last remaining unspoiled salt water estuary--for sailing, recreational boating, fishing, shrimping, crabbing etc. and preserving the region for future generations. The proposed port expansion, according to them, is very different from the original master plan to build an ideal community on the Island and now would be reduced to just another one-industry town.

What the controversy boils down to is balancing industrial growth with quality of life concerns. Charleston expects to handle 2.4 million TEU by the year 2015. It is a port that presently draws cargo from twenty-six states. According to the port's own statistics, 80 percent of the containers handled by Charleston represent commerce by the Carolinas, Georgia, Tennessee and Florida (Baldwin 1997). The fact that Charleston is only the 72nd largest metropolitan area in the country and that it has no particular centrality advantage compared with the competing ports is noteworthy. One should also note the corresponding expansion plans of other container ports in the region, particularly those in Florida, Georgia and Virginia. Every one of these ports now aims to be the load center for the region and provide an efficient conduit for intermodal movements to the interior points. Is there a solution to this intermediacy-based competition between similarly situated container ports and the quality-of-life concerns of affected residents? The next session will attempt answering some of those issues.

FUTURE TRENDS AND SURVIVAL STRATEGIES

The fact that there is overcapacity on the U.S. East Coast is undeniable (Abrams). So, are today's port expansion plans a function of local political egos, or is it truly a must? Will these port expansions, although not directly funded by the local citizens, generate sufficient revenues to sustain themselves, or will they become a liability for future taxpayers? These are troubling questions that must be answered. As discussed earlier, crucial decisions such as which port to call on the East Coast are made by the liner operators and the ports play merely subservient roles. No port on the coastline other than the bi-state Port of New York and New Jersey has the centrality advantage to naturally attract the liner operators. In this context, it is interesting to note the most recent container handling trends on the U.S. East Coast.

Table 3 - Container Handling Trends in Major East Coast Ports

Port	3/97	3/96	% Diff	97YTD	96 YTD	% Diff
NY/NJ	146,698	130,553	12	392,767	363,088	8
Charleston	81,877	76,278	7	222,580	197,179	13
Hampton Roads	74,068	48,683	53	191,165	124,238	54
Miami	50,149	42,933	17	140,407	120,477	17
Port Everglades	45,714	37,273	22	117,026	101,029	16
Savannah	44,893	36,542	23	124,005	108,213	15
Baltimore	20,618	23,965	-14	64,924	68,709	-6
Jacksonville	16,515	18,254	-10	44,487	45,685	-3
Wilmington DE	9,835	7,650	29	24,970	24,562	2
Wilmington NC	8,446	7,367	15	22,348	19,350	15

Source: PIERS/Journal of Commerce (1997)

According to the PIERS statistics, the average growth rate during the first three months of 1997 for all US container ports was about 8 percent. While the port of New York and New Jersey grew at the national rate and Charleston at a higher rate of 13 percent, Virginia Port Authority's Hampton Roads grew at a phenomenal rate of 54 percent and will probably, again finish the year ahead of Charleston. The incredible growth at Hampton Roads is taking place primarily at the expense of the port of Baltimore and partly because of the dredging problems at New York and New Jersey. This can again be explained using centrality and intermediacy factors of location. If New York and New Jersey cannot handle a ship because of its draft limitations, Hampton Roads almost automatically becomes the next best alternative. This is because of its strategically located deep draft harbors, the centrality with the mid-Atlantic region and the availability of good intermodal connections to interior points. The port already handles more intermodal rail cargo than even New York and expects to triple their business by the year 2010 (Menon 1997).

The ports in Florida benefit from the Latin American and Caribbean economic growth. Miami and Port Everglades in particular are gaining significantly from this as shown in the Table 3. This really leaves the ports in North and South Carolinas and Georgia without a strategic location

advantage. Besides, from an intermodal perspective, there is very little to choose between Charleston and Savannah, the two old rivals from the 1980s. These ports can only compete for the second and/or third liner ports of call on the East Coast. Furthermore, these ports will have to be continuously dredged to accommodate the latest generation of container vessels. So, there is an impetus on these South Atlantic ports in particular to be creative in their approach to further port development.

There is a good strategy to overcome the port development dilemma of container ports. This would involve seeking private investment to build, operate and subsequently transfer the facility (BOT-basis) to a public entity such as a State Port Authority as is done in some parts of the world. As these leasing agreements are typically for a long period such as twenty or thirty years, this would bring some amount of permanency to a container port undertaking and prevent it from becoming a liability for the tax payer. However, this is rather difficult to accomplish on the U.S. East Coast because making such investment when there are so many options and so much over-capacity in the market is not particularly attractive for a private operator. Thus, a market solution appears difficult. This leads to another strategy that has received some attention in the recent past.

A recent futuristic article (Wastler 1997) contained a rather ominous message for port executives. In that article, the author postulates a scenario, sometime in the next millennium, by which time, all U.S. container ports had become regional alliances, owned by a carrier alliance or a mega-railroad, and their organization, the American Association of Port Alliances. A fictitious leader of the organization subsequently laments the ports' failure to ally among them and make use of their antitrust immunity for collective pricing. In this imaginary piece, though there were some regional pricing agreements, the ports did not comply with them because they were too busy indulging in cutthroat competition and raiding each other's clients. The politics of creating a bi-state port authority--for example, between Georgia and South Carolina--is extraordinarily complicated. Nevertheless, this is surmountable and has been done very effectively by others. Indeed the global alliances--the entities that ports are truly concerned about and are partly responsible for their present predicament--are an outcome of partnerships that include traditional conference operators as well as non-conference independent liner operators, their perennial opponents. Such arrangements would have been considered most improbable until a few years ago. So, one strategy for ports is to create an alliance among competing ports that would avoid unnecessary and costly duplication of facilities within the same region. The recent decision by six U.S. East Coast ports (New York-New Jersey, Baltimore, Hampton Roads, Wilmington NC, Charleston and Savannah) to share information is a first step in the right direction. According to the agreement (Atlantic Coast Public Marine Terminal Agreement) filed by the ports with the U.S. Federal Maritime Commission, the ports will discuss rates and service levels but not indulge in setting rates collectively (Brennan 1998). Interestingly, a provision in the agreement will allow two or more members to discuss agreements with ocean carriers and stevedores for use of terminal and other shore-side facilities on a voluntary basis. Legal cooperation among competing ports, allowed by the current Shipping Act, will help the ports avoid making risky expansion decisions like building a mega-terminal in an unspoiled estuary.

Ports should remember that local residents would always be there unlike the liner clients who may come and go as the wind of inducements shifts from one port to the other. It will also help the port officials opt for feasible second choices when they are easily available and reinvigorate former industrial facilities rather than building a new port in a new area earmarked for recreation and ideal community habitat. It is difficult to give up one's competitive zeal and even more important, the inflated political egos, and cooperate with past competitors even if such cooperation would better the societal welfare. Nevertheless, that is what extraordinary leadership is all about.

CONCLUSION

Seaports play a major role in facilitating global supply chains. However, the changing dynamics of container trade have made them more like puppets on a string and very much at the mercy of liner shipping companies. There are a number of such ports on the U.S. East Coast that are in competition with each other for the coveted load center status. Despite the over-capacity that presently exists, all these ports are undertaking ambitious expansion plans in anticipation of future trade. This is somewhat analogous to purchasing a very expensive lottery ticket. In addition to the financial risk involved, there are the quality of life issues raised by affected local residents. The current trends suggest that while the Port of New York and New Jersey, Hampton Roads and the Florida ports may have some natural advantages, the best strategy for the competing ports of Charleston and Savannah may be to operate as a bi-state port authority. A recent agreement by six competing U.S. East Coast ports to share information and service levels is a step in the right direction. Such agreements will lead to a wider community involvement and, coordination in port planning and development. This will avoid costly duplication of huge investments that U.S. ports are forced to make by their liner clients. However, a high level of political maturity and foresight is essential for such agreements to be perceived with any level of seriousness.

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