Constraints and challenges in planning small and medium size ports
Contraintes et défis dans l'aménagement des ports de petite et moyenne taille

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Abstract: In an age of increasing globalisation of the economy, embedded in which are strong forces favouring the concentration of trade at the largest seaports, the viability of many smaller ports appears threatened. This paper briefly examines the bases of these threats, and discusses how smaller ports might respond. Establishing niche functions, providing flexible and low cost alternatives are some of the opportunities evaluated. A strong argument is presented for smaller ports to be integrated in local and regional planning.

Keywords: Small ports - Globalisation - Regional planning - Coastal shipping

Résumé: Dans le monde actuel, où les tendances à la concentration du trafic maritime dans les ports de grande échelle sont très fortes, les ports de petite et moyenne taille se retrouvent en difficulté. On évalue dans cet article quelques mesures qui peuvent offrir de l'aide à ces ports pour répondre aux défis actuels. Etablir des fonctions très spécifiques, être flexibles dans leurs relations avec la clientèle et prendre avantage de leurs frais d'exploitation modérés sont parmi les éléments considérés. On recommande une forte interrelation entre les ports moyens et l'aménagement du territoire.

Mots-clés: Ports moyens - Globalisation - Aménagement du territoire - Cabotage

Small and medium size ports around the world are facing considerable challenges, and in many cases their very survival is at stake. A complex set of economic and institutional factors present significant constraints. The purpose of this paper is to examine the bases of these constraints in order to understand what opportunities, if any, are there for smaller ports to survive and flourish. By assessing the nature of the challenges it becomes possible to identify opportunities that some ports might be able to exploit. The ports by themselves, however, may not be able to take advantage of the possibilities without actions from different levels of government. We suggest that public policy initiatives are vital elements in determining whether or not the smaller ports will survive.

This paper is based upon research conducted primarily in North America. Our research team has been concerned with understanding the nature and functioning of smaller ports. More recently, we have begun to focus on the persistence of small and medium ports, having recognised that some smaller ports are coping well, in spite of the challenges they are facing. Although this paper has a North American focus, we recognise that there are considerable similarities with the conditions of smaller ports in Europe. We are confident that this paper has relevance to the situation on the other side of the Atlantic, and that it may lead to a useful exchange of ideas and strategies that may help maintain small and medium ports on both sides of the ocean.

Our definition of small and medium ports is based upon a very pragmatic, although somewhat limited, criteria. Cargo tonnage is used to separate out the larger ports in national or regional port systems. For example, on the Saint Lawrence River a significant break in the rank-size distribution of ports based on tonnages occurs between the 4th ranked port, Quebec, with over 16 million tons of cargo, and the 5th ranked port, Baie Comeau, with 6 million tons. Similar breaks have been used in New England to separate Boston and Portland from the remainder. While this provides a relatively straightforward base for differentiation the various classes, we are aware that it limits international comparisons, because the breaks occur at different cargo tonnages. In addition, cargo totals represent the addition of freight of all kinds, from low value bulk shipments to high value break-bulk (Vigarié, 1983). A more satisfactory definition still has to be found, but we suggest that it may lie in comparisons between the size of the related port service sectors.

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I - CONSTRAINTS

We recognise that there are many factors that are limiting smaller ports in national and international transport systems today. We wish to focus on four main elements, recognising however, that there is a great deal of interdependence between the separate constraints.

A - Economic

Globalisation of the economy is a vital force shaping maritime traffic. Indeed, maritime transport is facilitating the emergence of economic interdependence. Globalisation has unleashed strong forces of concentration in marine transportation. This is evident in the emergence of the mega carriers that dominate the world container trade. There are a relatively small number of carriers that operate on a global scale, and this concentration is being further pronounced by the establishment of strategic alliances between these lines (Slack et al., 1995). The result is a strong tendency for trade between regions to be channelled to an ever smaller set of service providers.

The strong forces of concentration are propelled by economies of scale. Only the mega carriers have the resources to provide fully integrated services "door to door". They operate across transport modes on global networks that require large traffic bases. The scale of their operations naturally favours larger ports, the load centres in these maritime chains. The mega carriers seek out client ports that can offer a range of services and infrastructures that facilitate their operations. Smaller ports, for the most part, are simply excluded, and are therefore at a significant disadvantage.

B - Technological

Operations at all levels in the shipping industry have become technologically intensive. Cargo handling, in particular, has become mechanised and automated. This has become very evident in the former break bulk trades, where containerisation has brought about changes of major importance. Ports now have to provide equipment that is becoming ever more sophisticated... and expensive. Electronic Data Interchanges (EDI) is another expensive technological innovation that is being introduced.

Here again, smaller ports are at a disadvantage. They may have neither the traffic base nor the revenues to keep pace with the technological solutions to cargo handling that clients require. Technological solutions are most readily adopted by the load centres, which tends to keep them at the forefront of efficiency, and in turn, at the head of cargo traffic tables.

C - Financial

The costs of providing port infrastructures are growing rapidly. Sophisticated cargo handling technology, such as high speed gantry cranes and mobile terminal equipment, represent many millions of dollars of capital investment. In addition, the space requirements for storage and handling necessitate larger and larger sites that can only be obtained at high costs of assembly and preparation. The growing size of ships necessitates ever more deeper and extensive approach channels. Ports, which formerly were marked by a high degree labour intensity, have been transformed into facilities that are now heavily capital intensive.

Ports of all size are caught up in a spiral of capital spending requirements that are becoming difficult to sustain (Slack, 1994). Yet the larger ports have access to capital more readily that their smaller counterparts. This is evident from their generally larger revenue base, and also because they have greater borrowing power. They are able to draw upon much more public financial support, because of their perceived importance in national economies. Smaller ports tend to be much more constrained, and may have very limited opportunities to draw upon financial support, both private and public.

D - Political

The political dimension plays an important role in shaping port development. Port administration usually reflects and reinforces a port hierarchy. In Canada, for example, the largest ports are under the authority of a national ports corporation, the Canadian Ports Corporation (CPC), whereas the smaller ports are administered by Transport Canada. The degree of financial independence of the CPC ports is far greater (Mc Calla, 1994). Similarly in France, the larger ports are recognized as ports autonomes, and enjoy a much more generous allocation of state funds than the smaller ports. In recent years, many countries have begun to remove the interference of government in port...
development. From out-right privatisation to deregulation and devolution, financially strapped
governments have been forced to reduce the level of support to ports. The trend has not helped most
smaller ports. With their limited borrowing abilities and small revenue bases, they are not able to
adjust as easily as many of the larger ports.

It is evident, therefore, that a powerful set of interdependent forces are shaping maritime
transportation and port nodes. These pressures are seen to work in favour of the largest ports, those
with the largest traffic bases and the largest financial resources. The smaller ports are seen to be at a
disadvantage in dealing with the shipping lines that shape the patterns of trade, in accessing the
financial resources to keep pace with technological change, and are at the lowest rungs of
administrative structures.

Yet small ports are surviving. Despite the domination by the largest ports of world maritime traffic
flows, there is much evidence to indicate that smaller ports continue to be active and are involved in
cargo flows at a level that is perhaps somewhat unexpected, given the strong centralising forces
reviewed above. Why should this be? Based on our own research findings, and evidence from the
literature, we go on to discuss under what conditions small ports persist. A number of factors are
reviewed, which are seen as opportunities for small ports' survival.

II - OPPORTUNITIES

Our research in Québec has demonstrated that approximately half of the 29 smaller ports has been
stable or growing over the last ten years. In Europe too, there have been a number of successes among
smaller ports (Hilling, 1988). There is no single thread behind these success stories. It would appear
that there are a variety of explanations possible, but within the broad range of factors, several
conditions present themselves in a large number of cases.

A - Flexibility

An advantage that smaller ports possess over the large load centres is their adaptability. Because of
their size they do not possess large administrations and bureaucracies. They have the ability to adjust
very rapidly to change. A new opportunity, such as a request from a small shipper for space, can be
arranged usually more easily than in the larger ports, with their layers of administration and complex
approval processes. Smaller shippers and the lesser shipping lines may prefer dealing with smaller
ports because they may not be given attention by the largest ports, for whom long-term contracts may
be required. This flexibility means that in a rapidly changing commercial environment, smaller ports
provide opportunities for adaptation that are essential to regional and national economies.

Flexibility is also manifested in terms of costs. Although small ports cannot match the impressive scale
economies of the load centre ports, they have the ability to offer lower cost alternatives. Both in terms
of overheads and in dock labour, significant cost advantages may be available. Most large ports have
large administrations, and are bound by union contracts with their stevedores. Some small ports in
Canada, such as Bayside (NB) and Bécancour (QC), have been able to draw traffic away from nearby
larger ports, such as Saint John (NB) and Trois-Rivières (QC), because they do not use unionised
dockers. In Europe, these advantages are at the heart of the success of several former smaller ports,
such as Felixstowe and La Spezia, which have become major actors in the container traffic of Great
Britain and Italy, at the expense of the formerly larger ports of London and Genoa (Hilling, 1988).

Smaller ports also can provide greater flexibility in terms of coastal zone planning. Unlike the larger
ports, which seek to retain exclusive use of the shoreline for their own activities, citing grounds of
safety, security and efficiency, smaller ports are more compatible with multiple waterfront uses. As
planning the coastal zone is becoming one of the most critical areas for bio-physical, land, and
economic planning, their compatibility with recreation, tourism, fishing and housing uses becomes an
important advantage. Smaller ports can be made to be an integral part of comprehensive and multi-
functional shoreline planning.

B - Niche functions

Research on competition has demonstrated that there are several strategies that can be pursued by
enterprises seeking to retain a competitive edge (Porter, 1986). One of the most appropriate for
smaller ports is the establishment of a niche function. Since they cannot compete with the larger ports
across a broad spectrum of cargo traffic, specialisation in a fairly narrow range of commodities or
with very specific market areas allows smaller ports to exploit particular trades in which they can achieve efficiencies. Two examples illustrate the point very well. On the St. Lawrence River, the port of Gros Cacouna has developed as a successful small port involved in the lumber trade. It oriented its facilities towards the storage and shipment of this specific commodity, and has attracted traffic from a wide spectrum of sources from all over Québec. In a similar way, the port of New Bedford (Mass) attracted a firm that established trade links with South Africa for the importation of fruit. The success of the operation has lead to further fruit imports from other sources.

These examples indicate that a smaller port may withstand the competition from the load centres through specialisation. There are many smaller importers/exporters and small shipping lines that may prefer the business flexibility offered by more modest-size ports. Serving specific niches, however small, is a vital element in the survivability of small ports.

C - Coastal/inland traffic regeneration

International traffic is usually the most important element in small port activity (Vigarié, 1983), but our research suggests that their greatest relative contribution is in coastal trade (Slack et al., 1993). Whether it is to serve as feeders to larger ports, or to act as links in regional and national maritime chains, most are integrated in coastal shipping networks. There is a reciprocal relationship between smaller ports and coastal shipping, and the demise of many smaller marine terminals may be due in part to the decline in coastal fleets. Coastal and inland navigation has been negatively affected by competition with other modes, roads in particular, and this traffic diversion has had a marked impact on ports.

Any revitalisation of inland or coastal shipping depends upon the existence of a network of smaller ports. A coastal fleet would have to involve a number of lesser terminals in order to provide local and regional distribution. Without such a network, coastal shipping would lack the ability to offer any alternative to road transport. Thus, the viability of coastal shipping is very much dependent upon the existence of a port network, one that involves terminals of all sizes. Any resurgence of inland/coastal shipping would, in turn, be a factor in the survival of many smaller ports.

III - NEEDS

The opportunities reviewed above require a great deal of initiative on the part of port officials and port users. In a commercial environment, business involvement is obviously an essential ingredient. However, the survival of small ports also depends upon coordinated action from the public sector, and there is a clear role for public policy intervention. Three aspects of this involvement are considered here.

A - Local and regional planning

Smaller ports provide functions that serve local and regional needs in particular, and as such it is essential that they be well integrated in local and regional planning. In North America we have documented the lamentable state of relations, in which port administrations rarely consider immediate spatial impacts, and more importantly, where local authorities have tended to ignore the needs of the port (Lagimonière et al., 1993). The commercial success of ports requires that adequate space and land access be maintained and the potential land use conflicts be minimised. The growing competition for shoreline land makes it essential that the needs of smaller ports be integrated in management and zoning plans. Their adaptability and compatibility with other uses, however, must not result in their needs being underestimated in site allocation and planning land accessibility.

B - Transport policy

The future success of smaller ports hinges in part on the revitalisation of coastal shipping. There are signs that some governments are recognising that a balanced approach to transport policy, one that is more environmentally sustainable, requires multi-modal solutions. The emphasis on road transport, encouraged by public investments in road infrastructure, is now being questioned in many countries. In Europe there are signals that alternate modes, such as inland and coastal shipping, are being favoured in a new integrated transport strategy. While road transport will continue for the foreseeable future as the dominant mode, a network of smaller ports could help foster much needed alternatives. It remains to be seen if this policy will be actually implemented, with appropriate budgetary...
allocations. Of course, a transport policy that encourages the development of shipping can only benefit smaller ports in the long run.

C - Administration

Under present administrative structures smaller ports tend to be neglected because of their lower status in public bureaucracies. This is an impediment to improvement. The trend towards devolution and privatisation does not solve the problems of most smaller ports, indeed it accentuates the difficulties. How ports are managed and administered helps determine their future success or failure.

We have proposed a regional approach to port administration (Comtois and Slack, 1995). By combining ports, large and small, under a regional port authority, significant advantages can be realised. Rationalising facilities, combining services, sharing promotional costs, making effective use of increasingly scarce waterfront land, integrating the port system in regional planning are some of the claimed advantages. In Massachussetts, a move towards a state-wide allocation of infrastructure expenses has been implemented which will see smaller ports benefitting from state port investments that were hithertoforth absorbed by Massport in Boston.

Conclusion

This brief survey suggests that although there are many negative forces in the global economy, smaller ports can survive the harsh economic realities of today. They possess a range of advantages that their individual administrations must assess, evaluate and develop. Of prime importance is their need to exploit inherent flexibilities, especially in terms of offering low cost adaptable alternatives to the largest ports and in satisfying the needs of smaller clients.

Our research leads us to believe strongly that the successful smaller ports will be those that best adapt to the needs of their localities and regions. Their primary functions are local and regional, and they occupy sites that are increasingly subject to competing local needs. The ability of a network of smaller ports to contribute to a regional economy, the opportunities they present for integrating marine transportation in coastal management and planning, indicates that there are vital reciprocal relations and interests that must be preserved.

Although the opportunities are likely to be locally-based, the survival of smaller ports depends on several broader public policy issues. The administrative status of smaller ports is of considerable concern, especially where central governments are seemingly divesting themselves of financial responsibilities. A more regionally-based approach is suggested, where regional cooperation would permit integration of planning, coordination of investments, portioning of promotion costs, and where the sharing of externalities (positive and negative) would be advantageous.

The relationship between smaller ports and coastal shipping is vital. They provide the vital nodes that would permit coastal shipping to serve an important distributive role. Equally, an enhancement of coastal shipping would provide a needed boost to the economic survival of smaller ports. Governments need to re-think existing transport policies that have permitted road transport to become the overwhelmingly predominant freight mode. Social and environmental considerations are already being cited as justifications for a reevaluation; perhaps the needs of smaller ports and peripheral regions can be added.

Bibliography


