Improving Efficiency in Port and Maritime Logistics: The role of collaborative relationships

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I. INTRODUCTION

In this paper, I argue for increased attention by maritime economists to the organisation and management of business relationships affecting port and maritime logistics. A component of the maritime economics literature in recent years has dealt with the increased common ownership among parts of the maritime and logistics businesses. However, it is only recently that attention has been given to the level of and procedures for achieving the integration of investments and operations across different businesses.¹

The paper is a continuation of my long-term interest in the management of corporations owning diverse aspects of transport and logistics (Heaver, 1971). More recently, I have argued that common ownership of businesses, for example, shipping, logistics services and port terminals does not mean that they are subject to ‘integrated’ management. They are most likely to be managed at arms length of one another (Heaver, 2002, 2010). This has led to the question and my interest in ways to achieve better coordination across the business activities whether they are owned by one company or not. This is especially relevant in the multi-actor logistics environment of ports (Van De Horst and De Langen 2008, Franc and Van der Horst, 2010; Heaver, 2011). Panayides (2006) identifies research into the processes by which and conditions under which effective integration (meaning coordination) takes place among port and related activities as

Developments of the last decade have increased the importance of the effective working of logistics and supply chains and, thereby, increased the importance of the relationships between businesses, whether commonly owned or not. Conditions in Canada provide an opportunity to use local (Canadian, but especially Vancouver) conditions as basis for exploring the nature of changes in business relationships and suggesting some general conclusions.

The variability and uncertainty of trade volumes in the last decade have caused firms to give more attention to the conditions of their logistics chains. First, they are attaching greater importance to better visibility and improved reliability of the operations with which they interact. Second, but related, they expect a reduction in the adversarial nature of relationships between and among chain members and a greater prominence of collaborative attitudes to facilitate better coordination and reliability to achieve greater efficiency.

¹ Papers by Robinson (2002) and Bichou and Gray (2004) present the case for a holistic view of port functions as parts of logistics and supply chain systems, but do not deal with the processes of coordination. Panayides and Song (2008) test measures for assessing the integration of seaport container terminals with supply chains.
I use the term collaboration to capture the nature of the new relationships. However, I do not give the term a precise definition. The confidentiality of agreements and time limitations for this paper preclude using a precise definition to distinguish between agreements or to measure attributable outcomes. Rather, I presume that the parties’ acknowledgements of actions to achieve improved system outcomes rather than just to meet individual interests are sufficient to support the existence of collaboration. This is not to suggest that cooperation and collaboration are new in logistics chains. Even in chains in which firms approach the negotiation of conditions between them as zero-sum games, basic cooperation is necessary for operations to take place. (Even in adversarial negotiations, outcomes are not likely strictly zero-sum games because most negotiations take place with the expectations of an on-going relationship with future negotiations; although one side may view the other as a pariah.) However, there is wide evidence supported by theory that firms in port logistics are adapting their practices to be more collaborative.

The paper is in four further parts. In the next part of the paper, I review briefly the well known economic conditions of the first decade of this century that have resulted in the pursuit of greater efficiency and productivity by governments and corporations. The third part of the paper provides examples of collaborative arrangements and other initiatives through which relationships are changed in the pursuit of reliability and efficiency. The examples are anecdotal in that they are personal judgments about business behaviour based on reports in the trade press, many interactions with business leaders as well as a number of interviews specifically for this paper. Sections of this part of the paper deal with general conditions in Canada, specific conditions in Vancouver, and developments in the Canadian rail system, in international liner shipping and in drayage (local trucking). The final section of this part provides information on collaboration elsewhere. I conclude the paper by suggesting general explanations for the adaptations in behaviours and providing ideas for further research.

II. CHANGING CONDITIONS OF THE LAST DECADE

The last decade has been a turbulent time in the global economy. After a period of consistent growth in the 1990s during which the success of global supply-chain strategies was important, Europe and the U.S. led the global economy into recession in late 2000-early 2001. The effects of the technology ‘dot com’ led bubble is evident in a decline in the value of merchandise imports and exports in 2001, for developed countries -3.0% and developing countries -6.4% (UNCTADSTAT). The recession was not long and was followed by a boom powered by consumer expenditures, especially in the U.S. The resulting bubble was followed by the unprecedented financial collapse, starting in 2008, from which the global economy gained some traction in 2010, only to slip back into deep uncertainty in 2011. The effects are evident in the swings of the value of merchandise imports and exports for developed countries, +14.5% in 2007 to -22.4% in 2009, and developing countries, +16.2% in 2007 to -20.9% in 2009 (UNCTADSTAT).

The effects of these variations in trade on logistics service providers and shippers were aggravated by bottlenecks in logistics chains in the peak years, particularly for handling containers through ports. While congestion was common in 2004 and 2005 in ports of developed countries, it was particularly problematic on the West Coast of North America. The unexpected
failure of supply chains led shippers to seek greater reliability in their supply chains through new sourcing and logistics strategies. (The need to examine risks in supply chains has been further heightened by the effects of natural disasters in 2011.) The overriding lesson is the importance of risk management. This has important implications for maritime logistics. Shippers are going to source products in ways to manage risk better. The same reliance on long (slower) supply chains is unlikely to continue. Less reliance is less likely to be placed on single ‘best’ routes. And, the quality of communication between shippers and organisations in their supply chains needs to get better. Better exchange of information about long-run and short-run expectations is a low-cost effective way to improve logistics and supply chain coordination.

Faced with exceptional levels of demand uncertainty and with heightened competitive pressures, especially during periods of weak demand, corporations and governments have similar concerns about national and corporate productivity and competitiveness. Competitive pressures in end markets from alternate producers, competition between logistics chains and pressures for concessions or enhanced services from chain members (all consistent with the range of forces outlined by Porter, 1980) have all intensified efforts to improve performance. Consequently, the quest for innovations to improve productivity has become more important than ever before. Governments have initiated programmes designed to identify public and private initiatives to advance new practices and technologies to enable supply chains to be more efficient and, therefore, competitive.

III. EXAMPLES OF INITIATIVES TO IMPROVE EFFICIENCY

The nature of initiatives undertaken varies from place to place in keeping with the contrasted economic and institutional conditions. However, I believe that the general interest in initiatives for innovation can be found in many countries, perhaps, especially developed countries where the effects of the recessions have been greatest. An important component of initiatives is improved reliability in supply chains. I use Canadian examples to demonstrate the profound shift in the way that challenges in logistics chains, especially in ports, are being approached.

The examples of changes commence with broad federal programmes before shifting to initiatives that focus on transport and the Vancouver gateway. Because rail intermodal and bulk transport are major components of Canadian maritime logistics chains, service developments specifically related to rail are examined. Rail, like liner shipping, has operated under concepts of common carrier obligations which have contributed to the general absence of explicit collaborative service arrangements with customers.

General Canadian initiatives for competitiveness

Specific government initiatives can be cited as evidence of the increased concern for national competitiveness. In 2005, the Government of Canada provided 10-year funding of $30 million to the Council of Canadian Academies.\(^2\) It soon set up a Committee on the State of Science and Technology in Canada. The Committee’s report has two conclusions of special relevance to this paper. First, the Committee concluded that:

\(^2\) Operating at arm’s length from government, the Council carries out studies of subjects initially proposed by the government, and subsequently, by non-governmental and private sector organizations.
One important cluster of technologies — those related to transportation — was identified by survey respondents as unusually weak and perhaps getting weaker. Given the importance of efficient transportation, particularly in a geography as vast as Canada’s, the committee notes that the apparent technological weakness of this infrastructure could have significant implications. (Committee, 2006.10)

Second, the Committee noted that a paradigm shift was underway in how science is done around the world. Inter and multi-disciplinary approaches to research problem-solving are becoming the norm. “A counterpart of interdisciplinarity is the growing importance of collaboration across disciplines, across borders, and across the divides that have traditionally separated institutions.” (Committee, 2006.126) Increased collaboration is evidently a widespread phenomenon.

The concern in Canada for lagging productivity led the Council to conduct a study on business innovation (Expert Panel, 2009). The Panel concluded that Canada’s weak growth of multi-factor productivity (labour and capital) indicates that the country’s lagging productivity growth is largely due to weak business innovation, encompassing technologies and processes. The Panel concluded:

Because Canada’s productivity problem is actually a business innovation problem, the discussion about what to do to improve productivity in Canada needs to focus on the factors that encourage, or discourage, the adoption of innovation-based business strategies. This is a complex challenge because the mix of relevant factors varies from sector to sector and requires a much broader conception of innovation than the conventional R&D-centred view which, while important, is too limiting. … Public policy in respect of innovation therefore needs to be informed by a deep understanding of the factors that influence business decision makers, sector by sector, … (Expert Panel, 2009.11)

**Transport and logistics specific initiatives for Vancouver**

Consistent with the sector approach, Transport Canada sponsored a series of workshops in 2010 devoted to Innovation in Transportation. (WESTAC, 2010) The workshops brought together a wide range of ‘thought leaders and experts’ from industry and academia. At the workshop in Vancouver, there was recognition that identifying strategies that create an innovation culture may be more important than identifying particular products. However, it was easier to recognise barriers to innovation than tangible solutions. The interdependent nature of many stakeholders in transportation systems was recognised as giving rise to barriers because sufficient collaboration among many stakeholders is often difficult to achieve. However, there was strong interest expressed by firms operating in the gateway community for greater collaboration among supply chain partners in order to improve the reliability of individual operations and the gateway in total. Better sharing of information was viewed as a key.

The latter position is indicative of the persistence of challenges in relationships in spite of initiatives in the gateway which might have been expected to improve collaboration. As early as 1987, a coalition of interests involving the port authorities in Vancouver, railways, terminal
operators and labour gave rise to a Roundtable on Transportation. The Roundtable sponsored a paper on the need for all levels of government to address policies resulting in higher railway costs in Canada than in the U.S.\textsuperscript{3} The organization was an effective lobby with governments as a ‘common target’. In 1994, the Greater Vancouver Gateway Council (GVGC) was formed to promote Vancouver as the Gateway of Choice for North America. The GVGC has been an effective model in promoting the gateway concept and in funding studies, the most ambitious of which was a study in 2003 of the infrastructure investment needs in the gateway. However, while effective in relationships with governments, the GVGC does not take up matters which relate to operational matters or business dealings among members. Although it led to better communication among the actors, it did not result in a major shift in their relationships.

A change in the relationship among the gateway actors required an independent leader with a system-wide focus; (and an environment in which reliability and greater efficiency were more important). This was provided by the Vancouver Port Authority\textsuperscript{4} under its Supply Chain Strategy Program initiated in 2005. The programme had three principal themes: measure and monitor service performance; lead and influence new operating practices; and invest and participate in the network. The proactive role of Port Metro Vancouver (PMV) amounted to a new governance model for the port. To advance the strategy, PMV has used various committees to increase dialogue and to focus attention on important issues. However, resolving issues remained the responsibility of the affected parties alone. The committees provided the input for the development of operating performance metrics that were published on a ‘Dashboard’ to be used to detect early notice of changes in performance. However, the published Dashboard has been discontinued because experience was that too much attention was devoted to the merits of the numbers (the tool), detracting from discussion and treatment of the issues behind the numbers. Recently, improved operating relationships have been advanced through a number of formal collaborations agreements entered into by the railways with PMV and terminals. A Supply Chain Performance Executive Committee composed of representatives of PMV, container and bulk terminal terminals and the railways has been established in support of the agreements.

The supply chain focus in Vancouver led to successful arguments for participation by the federal government because of the role of federal policies. In 2006, Prime Minister Harper announced the Asia-Pacific Gateway and Corridor Initiative, an integrated set of investment and policy measures to strengthen Canada’s competitive position in international commerce. Subsequently, this expanded into a national gateway programme. The federal presence has been important. It has enabled local, provincial and federal governments and businesses to invest concurrently through their respective responsibilities in infrastructure and it has increased recognition of and support for collaborative processes. Transport Canada chairs a Pacific Gateway Performance Table composed of representatives from all the modes of transport and port terminals. (The commitment to reliability in the gateway is evident in the 8-year agreement between port employers and the longshoremen’s union, signed in May 2011.)

The special case of the railways

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\textsuperscript{3}Issues included the taxation of the rail system, primarily fuel and property taxes and capital cost allowances, 
\textsuperscript{4}In 2008, three port authorities in Vancouver were amalgamated into the Vancouver Fraser Port Authority, generally known as Port Metro Vancouver, the name used for all references to the authority hereinafter.
Railways deserve special attention for two reasons. First, they are the major mode of inland transport serving the Pacific gateway. Currently, 65 percent of inbound containers leave the port by rail. Second, railway freight rates and services have always been highly contentious in Canada because of their importance and the limited direct competition that the railways face in many of their markets. However, the attention to railway services here simply exemplifies the reality everywhere that the performance of the port component of logistics chains is vitally affected by their inland connections.

In Canada, during the winter 2004 and into 2005, weather and volume-related capacity constraints raised service issues and complaints to an unprecedented level. The federal government initiated a service review process in 2008; the Rail Freight Service Review Panel issued its final report in January 2011. It concluded that there were significant rail service problems during the years studied (2006-2008) and that “many, but certainly not all, of the problems relate to the performance of CN and CP.” (2011.45) The direction of change recommended by the Panel was for more effective conduct by relying on commercial processes, already evident, with the possibility of further regulations should that be required. It recommended that:

... railways, in collaboration with their stakeholders, continue to develop commercial measures to improve rail service. These commercial initiatives would include the four key elements related to service changes, service agreements, dispute resolution and enhanced reporting. (2011.49)

My discussions with shippers support the proposition that rail service has continued to improve and that the railways are much more attentive to it. Railway executives have highlighted the importance of supply chain management strategies, especially Claude Mongeau, the president and CEO of CN since January 2010. In a speech in Vancouver in 2010 he, stated:

CN's precision railroading model has been a key driver in the Company's pursuit of efficiency and its ability to serve the Pacific Gateway effectively. Now CN is taking that model to the next level by focusing on supply chain initiatives and service excellence in a way that will help its customers grow and flow greater volumes of traffic through the gateway. (CN News Release, October 29, 2010)

The CN and CP have been entering into memoranda of understanding, agreements and service level agreements (SLA) with customers as the foundation for on-going management of their logistics chains. The agreements are a substantial shift in railway practice in Canada. In ports, agreements have been concluded with the port authorities as well as the terminal operators. For example, the PMV news release of May 31, 2010 states:

The agreement sets the framework for the Port, CN and port stakeholders to develop mechanisms to define, measure, monitor and evaluate the performance of each participant at the port against established benchmarks. It also establishes processes to proactively communicate on service-related matters and resolve disputes between CN, the Port and port supply chain participants on a commercial basis.

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5 The terms memorandum of understanding and agreement appear to be used when the essence of an agreement is to establish processes by which the parties collaborate by accepting objectives and metrics as tools in on-going monitoring and enhancement of services. SLA are likely to include specific service levels to be provided by a railway.
The president and CEO of DP World Vancouver, Matt Hoag, notes of an agreement with CP that:

This agreement outlines a number of goals and specific actions such that all stakeholders in the supply chain can have measurable accountabilities. … Over time we can measure performance changes, characterize best practices, and work cooperatively toward growth. (Canadian Pacific, News Release, 2010)

Agreements have always been necessary for the execution of major logistics operations. Long-term agreements were fundamental to the development of mines for the export of coal, for example. However, the level of collaboration occurring even for such shippers has increased. Current agreements may involve precise expectations and metrics for rail performance (SLA) but typically involve agreements on the objectives of each party and system key performance indicators (KPI). If the KPI are not met, the parties are faced with taking action. The result is a greater transparency and more collaborative relationship than existed previously. The agreements reflect a stronger recognition of system over individual costs. An example is the retention of an inventory of rail cars in Vancouver in winter months to accelerate service recovery should there be weather-based line closures. The railways have also entered into a range of SLA with individual shippers. The result is an increasingly tailor-made operating and service regime which is a significant shift from the residual ‘take it or leave it’ attitude derived from the common carrier obligation of equal (under similar conditions) treatment for all.

The programme of the railways may be viewed, as it is by many shippers, as a strategy simply to avert threatened regulation. Shippers fear that the improved service performance will not be sustained. However, the shift to a supply chain strategy is consistent with the expected behaviour of a participant in a chain subject to increasing global competition. There is more to be gained by focusing on increasing the efficiency and competitiveness of the chain than on increasing the share of the profits in the business.

Adaptations by shipping lines

Shipping lines, like the railways, have traditionally provided a given level of service to a large number of shippers. Containerisation facilitated intermodal transport and enabled shipping lines to offer services to and from inland destinations. However, the levels of service were still as set down in a published schedule, plus (generally not minus) allowances for possible delays. Improved information systems have enabled shippers to be better informed about where cargoes are and about delivery dates but did not change the nature of service offerings.

The heightened concerns about reliability in logistics systems has led to change, albeit slowly. Initially, ocean service-guaranteed services were offered by the logistics businesses associated with shipping lines. In 2006, APL Logistics was the first line to offer a port-to-door time guaranteed less-than-container (LCL) service from China into the U.S., with Con-way Freight performing the inland carriage. The ocean carrier is APL. Japan, South Korea, Singapore and Taiwan were added as origins in 2007 and Mexico was added as a destination in 2009. In 2008, a full-container guaranteed service was introduced from China to the U.S. In 2009, Hanjin and MOL introduced time-guaranteed services on routes from Asia to the US West Coast with distribution in the USA being handled by Old Dominion Freight Line and the railway company
In 2010, Maersk introduced ‘Priority Product upgrade’ by which shippers could get loading priority on vessels likely to be fully loaded. In a presentation in June 2011, the CEO of Maersk, Eivind Kolding, initiated a debate about the focus of the liner shipping industry by outlining the New Normal in liner shipping. He said that the development of Maersk’s services will be based on “reliability, ease of business and transparent environmental performance” and that “reliability is the new rate war” (Port Technology International 2011). In keeping with the emphasis placed on reliability, Kolding recommended “load protection fees” to discourage container overbooking; he said no shows amount to 30% of bookings. APL has followed Maersk’s lead and introduced no-show fees and service guarantees, backed by payments of shippers, in the event a booked container cannot be loaded (Shipping Position Online 2011). Kolding also noted port terminals need to shoulder responsibility in improving reliability as two thirds of all delays are caused at the port terminal (Port Technology 2011).

The case of trucking

The efficiency of trucking services to and from container terminals, generally dominated by drayage, is a local problem found globally. The common features are the occurrence of congestion on the roads and at the terminal gates. Problems of waiting times on the terminals have been reduced greatly by improved technologies and management under the controlled conditions of the terminal. The challenges outside the terminals are less tractable as many shippers with their preferred service hours are involved, many trucking enterprises offer services, often owner operators, and the vehicles operate on city streets and highways. The problems have existed for many years but have generally become chronic before port authorities have ‘taken ownership’ of initiatives to improve conditions. Measures taken to reduce the problems include, reservation systems for trucks at terminals, designated truck routes and improvements in rail links, most notably in Los Angeles. However, trucking services continue to be sources of inefficiency. Collaboration is an important part of most improvement initiatives but is difficult because of the number of businesses involved, generally in different supply chains. There has been an increase in academic papers related to the trucking issues, for example, Guan and Liu, 2009; Ubogu, Ariyo and Mamman, 2011; and Yuen, Basso and Zhang, 2008.

The wide extent of the search for innovation and collaboration in ports

I do not examine initiatives in specific non-Canadian ports. However, it is appropriate to refer to two non-Canadian initiatives as examples of collaborative processes elsewhere. The first example is the U.S. West Coast Collaboration involving the six ports and two railways that serve the U.S. Pacific coast, established in order to address the transportation system holistically. The executive director of the Port of Oakland, Omar Benjamin, stated:

Today’s economic conditions have compelled all of us to take a closer look at how we conduct our business to discover new approaches that yield improved results. This is

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6 The examples show that the design and operation of a well-coordinated service does not require common ownership.
7 This was not immediately available in the USA because of structuring and filing requirements of the Federal Maritime Commission.
8 Terminals would note that a difficulty that they face is the low reliability in vessels arriving on time!
9 The initiative was triggered not only by the West Coast capacity problems but also by the improved competitiveness of Canadian gateways.
happening throughout the entire supply chain and U.S. West Coast ports and Western railroads are no exception. Our mission is to further strengthen the US West Coast ports’ position as the preferred gateway for Asia cargo to and from the US Midwest and US cities further east. (Port of Los Angeles 2009)

The second example is the Seaport Cluster Research Programme of the Global Maritime Logistics Council (GMLC), a council of the Global Institute of Logistics (GIL). GMLC uses the term ‘cluster’ to refer to the various organisations contributing to the movement of goods through a seaport. The research programme, 2007-2011 is very much in line with subject of this paper; the final report is not available at the time of writing. The early research revealed:

…a need to better understand service levels and to foster relationships between the players in the supply chain, connecting the hinterland and terminal by benchmarking and building up key performance indicators.

The Institute proposes that the alignment of port stakeholders’ missions and visions will bring service level alignment. Further, a shared vision will break down silo-based systems and thinking, to be replaced by collaboration and cohesion so that the end result is a joined up system that maximizes the use of time and minimizes cost. This vision needs to be spearheaded by a ‘champion’ of the supply chain collaboration model, and complemented by a committee with representatives from all port stakeholders. (Global Maritime Logistics Council, 2009.1)

GIL’s research into seaport clusters was conducted with a view to producing a guide to global best practices in Port Cluster Development. A Port Cluster Governance Committee with members from 14 ports in 13 countries guides the research. The research follows the benchmarking and best-in-class methodologies common in logistics. Valenciaport port cluster, represented by the Port Authority of Valencia, is identified as appropriate for the best-in-class designation with a “model that is transferable.” (Global Maritime Logistics Council, 2009.12)

While a vital component of the research programme is to encourage greater collaboration between businesses in ports, an important element goes beyond this. It seeks to identify a best-in-class practice consistent with a definition of corporate governance which it ascribes to the OECD.¹⁰ The result is to suggest an administrative role for a port corporation beyond that practical in many jurisdictions and differing from the perception of governance arising from the research for this paper.

IV. INTERPRETATION AND IMPLICATIONS FOR RESEARCH

The evidence of changes in the port of Vancouver, in the provision of rail service in Canada and of liner shipping services are consistent with the argument that the economic conditions of the first decade of this century have resulted in a significant shift in the value parameters relevant to contractual relationships in international maritime logistics. Increased reliability in transport and logistics services has become much more important, thereby introducing new dynamics to

¹⁰ Corporate governance: Procedures and processes according to which an organization is directed and controlled. The corporate governance structure specifies the distribution of rights and responsibilities among the different participants in the organization – such as the board, managers, shareholders and other stakeholders – and lays down the rules and procedures for decision-making. (European Central Bank, Annual Report, 2004, Frankfurt, Glossary)
business relationships. (This is notwithstanding concerns about slow steaming and continued scheduled unreliability of lines.) These conditions described largely locally in this paper are applicable globally.

The changes in market conditions have led to public policies and institutional arrangements that enable transport and logistics firms to respond more freely to market forces. In Canada as elsewhere, the degree of autonomy exercised by port authorities has increased to enable greater response to local conditions. This is exemplified by PMV which has been more proactive in effecting change in the relationships among port logistics activities. The regulations of railways in Canada has remained reliant mainly on market forces but the attributes of railway services have become an explicit component of public policy monitoring. Outside North America, the privatisation of the railway operations has introduced new market opportunities. The international liner shipping industry has continued to experience increased reliance on corporate strategy as the roles of shipping conferences and government regulations have diminished. Thus, the public policy environments have been favourable to and encouraged new, often more collaborative, approaches in business relationships along logistics chains.

It is appropriate then for the interests of maritime economists to shift from integration through common ownership to the study of how the contractual relationships between business activities are adapting to the new conditions. More research is already evident, for example, Van De Horst and De Langen 2008; De Langen 2009; Fremont 2010; De Borger and De Bruyne, 2011; Heaver 2011; Rodriguez-Alvarez, Tovar and Wall, 2011; Wilmsmeier, Bergqvist and Cullinane, 2011. The characteristics of concession agreements between port authorities and terminal operators has been examined by Notteboom, 2007 and Pallis, Notteboom, and De Langen, 2008.

The construct of transaction cost economics and a resource-based view of corporate structure are used by Franc and Van der Horst (2010) to provide an insightful interpretation of the extent and nature of integration of shipping lines and terminal operating companies into hinterland services for the northern range ports of Europe. Another approach and one that seems well suited to the varied and less precise contractual nature of many of the relationships in North America is to work within the context of the economics of governance as conceived by Williamson (2002, 2005). This is an economic construct well suited to the examination of vertical integration and contracting relationships. The economics of governance is not to be confused with corporate governance or the use of governance in relation to the structures under which the public interests in ports are administered. Williamson defines the economics of governance as:

an exercise in bilateral private ordering, by which I mean that the immediate parties to an exchange are actively involved in the provision of good order and workable arrangements To be sure, the need for private ordering varies with the rules of the game as provided by the state. (2005,1)

While the economics of governance applies to the full range of market transaction structures it is, particularly “a lens of contract construction” (Williamson, 2005,1) and is “predominantly concerned with ongoing contractual relations for which continuity of the relationship is a source of value” [emphasis in original] (Williamson, 2005,2). The economics of governance

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11 The opportunity or necessity for port authorities and, or shipping lines to invest in rail services creates different conditions for governance outcomes than in North America.
encompasses the effects of various market attributes on the nature of business relationships including the level of asset specificity and the need for adaption to uncertainty. The recent shift to more collaborative arrangements with flexibility to deal with issues that arise is consistent with viewing the contract not as a legalistic document but as one “to get the job done” [emphasis in original] (Williamson 2005,9).

This concept of governance differs significantly from the concept of corporate governance used in the GMLC study. The economics of governance is a foundation from which to examine the arrangements and contracts between members of logistics chains. It supports an investigation of the nature of contracts in light of the mutual and conflicting interests of the parties and the uncertainties faced in their individual operations and as parts of a supply chain in the short and long term. It is an especially useful approach today as firms recognise their interdependency and their need for greater transparency. It also encompasses the ability for the parties to adapt to future conditions, particularly, the manner by which the parties deal with uncertainty; the unexpected events that occur over time and are not explicitly resolved in the contract.

Therefore, the economics of governance is an appropriate approach for research that may lead to new insights into the management of relationships along the logistics chains of ports. Previous contractual arrangements, for example, between railways and port terminals (bulk and container) are likely to be found to have been less efficient to the parties and to the chain than the new collaborative arrangements. Understanding the differences is desirable. Research which examines the system-wide ramifications of contractual relationships would provide insights into the efficiency of the contracts and possible explanations for them in terms of the economics of governance.

The greater interest in collaboration along supply chains implies that a closer liaison between maritime economists generally and through the International Association of Maritime Economists with GMLC would be beneficial. The GMLC seeks to “extend the deployment of relationship orientation and collaboration, as a strategic organizational tool” (GMLC 2009.6). Although the economics of governance concept and the specific corporate governance model of GMLC differ, they are both approaches to examining contracts and relationships along logistics chains of ports. The development of greater interaction between the research of maritime economists and practitioners is consistent with the direction for research recommended by Woo et al. (2001) following their review of seaport research.

In addition to the general recommendation concerning the use of economic governance as an approach for research, I also wish to provide more specific arguments. I deal first with rail and shipping services.

The recent changes in the design and pricing of services by shipping lines (and railways) have not been the subject of studies by maritime economists. Liner shipping and railways have legacies of value of service pricing practices consistent with the constraints imposed by common carrier obligations. In liner shipping, service contracts have really been volume-based

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12 An example of the effect of asset specificity may be found in the relationship of shipping lines with North American railways where lines may have flexibility in serving alternate ports while railways are tied to particular ports. Investment by lines in rail services would change the structure.
agreements. Regulatory regimes, for example in the U.S., have no doubt acted as a brake on the rate of change in pricing practices; for example the delayed introduction of Maersk’s Priority Product service in U.S. trades because of FMC requirements (American Shipper Daily Newsletter, 2010). The confidentiality of rate agreements has no doubt discouraged more enquiries by maritime economists into price and service arrangements.

I suggest that the ‘traditional’ services provided by shipping lines and railways may now be viewed as asymmetric, in the sense that the risks attached to uncertain performance fell on the shipper or receiver.¹³ However, they were ‘accepted’ at the time. Now, however, the level and costs of uncertainty have increased or are perceived to have increased so that a new balance requires new service offerings, agreements or contracts. The basis of the new relationships is the treatment of uncertainty whether in the form of new levels of information exchange, ‘guaranteed’ services offered by shipping lines, agreements of the railways or the SLA of the railways. The changes in railway services in Canada seem more substantial than the changes in liner shipping, for which shipper concerns about the effects of slow steaming and on-time performance may override benefits from ‘guaranteed’ services. Studies of supply chain economics of slow steaming and service reliability would be valuable as both decisions are, no doubt, made from the perspective of their effects on shipping line profitability (or losses) not supply chain efficiency, including inventory costs.¹⁴

The changes in the relationship of the Canadian railways and shippers are consistent with the concept of economic governance under contractual conditions. The agreements seek to overcome the previous lack of transparency. While some agreements have precise metrics for services to be provided, most agreements have objectives for each party and agreed key performance indicators (KPI) to track performance. If KPI are missed the expectation is that discussion between the parties will lead to resolution. The agreements are based on a recognised interdependency and need to work together in a dynamic environment. On the basis of research in logistics, changes in the internal organisation of the parties will be important to their success in benefiting from the changes in their external relationships (Stank, Keller and Daugherty 2001). The different tradition of rail services in Europe means that different relationships exist but does not remove the ongoing issues of cost levels and service reliability under changing and uncertain conditions. In Europe more than in North America, these same issues apply to barge and short-sea services.

The nature and levels of uncertainty in transactions and their consequences along a logistics chain deserve more attention, as done by Rodriguez-Alvarez, Tovar, and Wall, 2011. Some uncertainty can be mitigated by better information flows between those in logistics chains, (Almotairi 2011). In spite of research that has been conducted for projects in process engineering for specific logistics flows, more research into the effects of information flows on uncertainty and its associated costs would be appropriate. Information availability is one part of the process. Data quality is another. Early inaccurate data may be less helpful than later better data. The economics of data is related to the quality of data over time and the planning horizon and cost effects for the data recipient. The time horizon is much shorter for a container terminal than it is for a railway, especially one operating over long hauls. The effects of uncertainty are influenced

¹³ That is the cargo owner directly or indirectly through another logistics service provider.
¹⁴ The effects of slow steaming on bunker costs has been studied, see Notteboom and Cariou, 2011
also by the decision procedures and rules of the receiving company. Uncertainties are bound to remain but information-based strategies among members of supply chains warrant investigation.

The example of Vancouver and the work of GMLC indicate the key role that can be played by a port authority in advancing collaboration in a port. However, the mechanism by which it is done should be expected to vary from port to port dependant on economic and institutional conditions. However, there are many problems that are common among ports and for which surveys of methods and results or comparative studies may be beneficial, for example, terminal gate reservation and pricing systems for trucks.

Summary

The volatility of economic conditions of the last decade and the increases in global competitiveness have driven strong trends for innovation, particularly in developed countries. One wide response has been to seek greater reliability and efficiencies in international logistics through collaboration among members of logistics chains, especially in ports. This collaboration has been advanced, but in different ways in different ports, by port authorities. The level of collaboration is a new phenomenon and warrants a new approach to research into agreements possibly using the concepts of the economics of governance.

It is suggested that container shipping lines and (Canadian) railways providing services to ports are shifting further away from the old common carrier model of providing and pricing their services to a model based on service, price and collaboration differentiation. This is particularly true for the railways because of the separability of operations among customers. But shipping lines are introducing new service options including price differentiation and mutual obligations. The old and the new agreements warrant research, for example, carrier agreements with terminals and shippers, and the effects of slow steaming on logistics system costs. Also, the economics of information reliability to different players in ports is now a matter of greater interest and warrants greater attention.

The impetus provided by the changing conditions to explore organizational relationships more than previously is in keeping with the trend for seaport research to shift to deal more with corporate and management issues. The quantity, quality and diversity of economic research related to seaports and to maritime topics generally has magnified greatly in recent years. I hope that this paper suggests a new perspective and encourages some more attention for a (small) segment of future research.

REFERENCES


