

THE PORT OF VANCOUVER

- Just a Pawn in the Game of Commerce?



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Acknowledgements

When you are about to begin, writing a thesis seems a long, difficult task. That is simply because *it is* a long, difficult task. Fortunately, it is less daunting once you have a couple of chapters done. Towards the end, you even find yourself enjoying it -an enjoyment based on satisfaction in the achievement, pleasure in the improvement in your technical writing, and of course the approaching end. *But* completing such a long-term project is impossible without the intellectual, moral and operational support of many people.

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Blindern, November 2006,

Anja Marita Husa

*Even in a globalizing world, all economic activities are geographically localized
(Dicken, 1998:10).*

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1. Background

1.1 *Introduction*

In the early 1950s, before container shipping was even a concept, most of the world's great centers of commerce had docks at their heart. Freight transportation was an urban industry, employing millions of people who drove, dragged, or pushed cargo through city streets to or from the piers. On the waterfront itself, swarms of workers clambered up gangplanks with loads on their backs or toiled deep in the holds of ships, stowing boxes and barrels in every available corner. Warehouses stood at the heads of many of the wharves, and where there were no warehouses, there were factories. As they had for centuries, manufacturers still clustered near the docks for easier delivery of raw materials and faster shipment of finished goods. Whether in San Francisco or Montreal, Hamburg or London, Rio or Buenos Aires, the surrounding neighborhoods were filled with households that made their livings from the port, bound together by the special nature of waterfront work and the unique culture that developed from it (Levinson 2006).

Then something revolutionary happens. The world made a box, - a soulless aluminum box held together with welds and rivets, with a wooden floor and two enormous doors at one end. The box soon became the core of a highly automated system for moving goods from one place to another, with a minimum of cost and complication on the way. Cities that had been centers of maritime commerce for centuries saw their waterfront decline with startling speed, unsuited to the container trade or simply unneeded (Levinson 2006). The manufacturers that endured high costs and antiquated urban plants in order to be near their suppliers and their customers have long since moved away, and venerable ship lines with century-old pedigrees were crushed by the enormous cost of adapting to container shipping.

Decades later, when enormous trailer trucks rule the highways and trains hauling nothing but sacks of boxes rumble through the night, it is hard to fathom how much the container

has changed the world. A 35-ton container of coffeemakers can leave a factory in Malaysia, be loaded aboard a ship, and cover 9,000 miles to Los Angeles in 16 days. A day later, the container is on a unit train to Chicago, where it is transferred immediately to a truck headed for Cincinnati at a cost lower than a single first-class air ticket. More than likely, no one has touched the contents, or even opened the container along the way. The modern container port has become a factory in which intricate movements required to service mammoth oceangoing vessels is choreographed by a computer long before the ship arrives; trains carry nothing but double-stacked containers roll into inter-modal terminal close to the dock; and giant cranes, -long enough to span the width of a ship broader than the Panama Canal-, work their way along as they remove one container after another.



Figure 1.1: On-dock-rail, the Port of Vancouver

Source: The Port of Vancouver

As parts of the ship are cleared of incoming containers, reloading begins, and dockside activity becomes even more frenzied (Levison 2006); each time the crane places an incoming container on one railcar, it picks up an outbound container from another, simultaneously emptying and filling up the ship. “The colorful chaos of the old-time pier is nowhere in evidence at the major container terminal” (2006:5-6).

Yet getting from the Ideal-X to a system that moves tens of millions of boxes each year was not an easy voyage. Both the container’s promoters and its opponents sensed from

the very beginning that this was an invention that could change the way the world works. That first container voyage of 1956, an idea turned into reality by the ceaseless drive of an entrepreneur who knew nothing about ships, unleashed more than a decade of battle around the world. Powerful labor leaders pulled out all the stops to block its ascent. Some ports spent heavily to promote it; others spent enormous sums for traditional piers and warehouses in the vain hope that the utilitarian object (the container) would prove a passing fad. What is it, then, about the container cargo business that makes it so vital for the world economy? Surely not the thing itself.

In what follows a brief overview of research object will be given, that is, how Canada's largest and most diversified federal port in North America, *the Port of Vancouver*, responds to the new age of containerization.

1.2 The Port of Vancouver

Before us lies tremendous potential to capture economic growth and prosperity as a result of increasing Asia-Pacific trade [...] and the Port of Vancouver is uniquely positioned to harness opportunities as a result. However, capturing the tremendous economic potential requires a good plan and the support of our communities and all levels of government

Captain Gordon Houston
Vancouver Port Authority 2005

1.2.1 The Situation

The Port of Vancouver covers a vast geographic area in British Columbia's¹ Lower Mainland². Eight municipalities border the water and land jurisdictions of the Port of Vancouver, as seen in Figure 1.2. The north and south arms of the Fraser River are managed by the other two port authorities in the Vancouver region; North Fraser Port Authority and Fraser River Port Authority, while Vancouver Port Authority (VPA) administers the lands and water that comprise the Port of Vancouver.

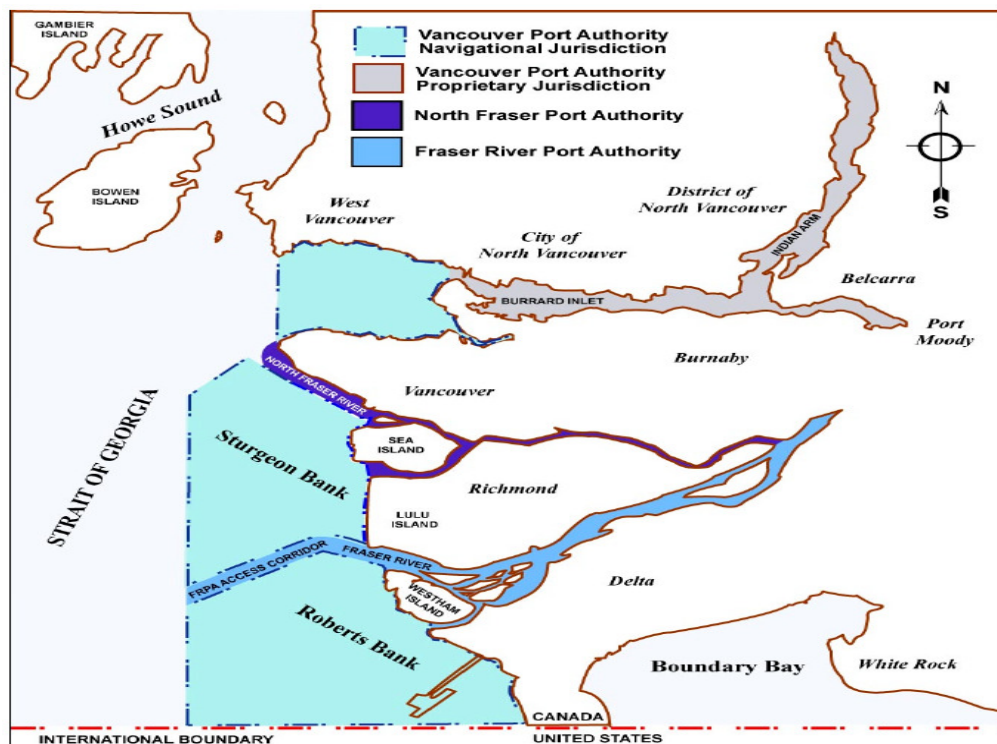


Figure 1.2: The Port of Vancouver

Source: Port of Vancouver Economic Impact Update, May 2005

Greater Vancouver is home to one of the largest ports in North America and some of the most modern container terminals in the world, the Port of Vancouver. Every year, the Port of Vancouver trades approximately \$43 billion with more than 90 economies, creates jobs for approximately 70,000 Canadians, contributes almost \$4 billion to

1. **British Columbia**, often also referred to as **B.C.**, is the westernmost of Canada's provinces (Wikipedia).
2. The **Lower Mainland** is the name that residents of British Columbia apply to the region surrounding the City of Vancouver (Wikipedia).

Canada's GDP, and generates \$763 million in tax revenue. By working together to maximize the opportunities being presented, the Port hopes to triple its benefits within 15 years (Vancouver Port Authority 2005). Increasing container trade with Asia, and specifically China, makes containers the Port of Vancouver's fastest growing sector, - a growth which is not expected to subside significantly over the next two decades. Container handling facilities on the Lower Mainland are, accordingly, being expanded and developed to capitalize on this major market opportunity and the considerable economic benefits it represent (Greater Vancouver Short-Sea Container Shipping Study).



Figure 1.3: COSCO Vancouver
Source: The Port of Vancouver.

But at the same time the Port of Vancouver is at a crossroads. Despite their vast potential, Vancouver's advantages are being jeopardized by freight congestion in the Lower Mainland, and alarming concerns about capacity to handle the projected trade growth over the next 20 years. Although a major road transportation improvement is planned on the Lower Mainland, trucking and railways companies are expected to face increasing challenges in the future to move containers in a timely manner and at reasonable rates. The need for an integrated multimodal transportation system that efficiently and safely moves goods and people while respecting the environment are for that reason highly critical if the Port of Vancouver wants to be a part of the global transportation game.

1.3 Why Study Seaport Clusters?

A number of recent economic and technological developments in shipping, cargo handling and related value added services, as well as hinterland transportation has substantially changed the role of ports. The impact of these developments can be synthesized into two key elements (Hazendonck 2001). First, port user demands now force port authorities and port operators to increasingly take into account various 'integrated logistics chain' objectives, that act as constraints on the port's operations. Second, port authorities and port operators are increasingly stimulated to consider social objectives, such as a contribution to regional employment, an improved quality of environment, security and mobility. Declercq and Verbeke (1996) provide an interesting, albeit service, overview of some the economic and technological dynamics occurring in the port environment.

The bottom line is that these developments have resulted in a more competitive environment to which port actors must respond almost continuously in a dynamic fashion in order to remain at par with rivals (see e.g. Heaver 1993, Goss 1990, Button 1993 and Stopford 1997).

As port actors are affected by higher uncertainties and risks than ever before, the importance of formal strategic analysis has also increased, so as to obtain valuable insights on the evaluation of port competition and on the individual port's or port actor's position vis-à-vis rivals. Moreover, as many seaports have had to become more market-oriented and seaport authorities as well as private port operators have been forced to develop efficiency based strategies, in-depth knowledge on the foundations of competitive advantage (Haezendonck 2001), i.e. *port specific advantages*, has become highly critical.

Surprisingly, then, perhaps, is that the cluster concept, - defined as a regional concentration of related economic activities- (Krugman 1991), has hardly been used to

analyze seaports, even though port activities are geographically concentrated in a limited number of regions (de Langen 2004).

Traditionally, a seaport was viewed as a transit area; a gateway through which goods and people move from and to the sea (Hazendonck 2001). As such, it was a place of contact between land and maritime space, a knot where ocean and inland transport lines meet and intertwine an inter-modal place of convergence (Weigend 1958, Hayuth 1985). But in the course of time, fundamental changing processes have broadened and deepened the functions of sea ports. Some sea ports have in fact grown out to become industrial complexes comprising a large number of related industrial activities. In more recent years, the logistical function of sea ports in particular has received much attention as the gateway position of major sea ports offers opportunities for the enhancement of value-added logistics, that is, an integration of the production and distribution chain (OECD 2000). By offering VAL services, ports aim to attract a large portion of the value-added creation within product chains. The modern sea port has in other words evolved from a pure transshipment centre to “a function in a logistics system” in a broader technological system (Hazendonck 2001). For this reason, then, ports can be regarded as ‘text-book cases’ of clustering as these regions attract substantial numbers of port related firms (see Fujita & Mori 1996) such as pilotage and towing service, distribution companies, haulers, manufacturers, forwarders and that like. See Chapter 6 for an in-depth rationale of this. It should be noted however that, especially in the regional economics literature, ports are usually studied as elements fully dependent on the larger system within they operate, typically an intercontinental, origin-destination logistics chain. The focus for this study, on the other hand, is not the entire logistics system, but precisely the port cluster as the critical hub and key component in that logistic chain.

The functional and spatial development of sea ports is depicted in Table 1.1 (OECD 2000; “Land Access to Seaports”). A distinction is made between elements related to the external environment, the functional organization, the spatial organization and port organization and strategy (Van den Berg & Van Klink 1994, World Bank 1992).

Table 1.1: Functional and spatial development of a sea port

	First generation port	Second generation port	Third generation port	Fourth generation port
<i>External environment</i>				
Period of developments	Before 1960s	After 1960s	After 1980s	2000
Exogenous developments	Colonization Steam ships Rise of nations Rise of trade	Petro-chemistry Lorry and pipeline Structural prosperity Industrialization	Multinationals Container Ecological protection Internationalization	Global economy Information systems Environment Informatisation

<i>Functional organization</i>				
Port functions	Transshipment (1) Storage (2) Trade (3)	(1) to (3) + Industry (4)	(1) to (4) + Distribution (5)	(1) to (5) + Logistical control
Production characteristics	Cargo flow Simple service Low value-added	Cargo flow Cargo transformation Combined services Improved value-added	Cargo information flow Cargo distribution Multiple service package High value-added (port oriented)	Cargo information flow Cargo information distribution Multiple service package High value-added (network oriented) Chain management
Type of cargo	Break bulk cargo	Break bulk and dry/liquid bulk	Bulk and unitized/containerized cargo	General cargo/containers

<i>Spatial organization</i>				
Spatial expansion of port	Quay and waterfront area	Enlarged port area	Terminals and distribelt towards landside	Network-related functional expansion
Principal locational factors	Presence of market Availability of labour	Access to raw materials Access to sales markets Availability of capital	Availability of transshipment facilities Access to sales market Space Flexibility and costs of labour	Availability of transshipment facilities Access to sales market Space Flexibility and costs of labour Available know-how

<i>Port organization and strategy</i>				
Organization characteristics	Independent activities within port Informal relationship between port and port users	Closer relationship between port and port users Loose relationship between activities in port Causal relationship between port and municipality	United port community Integration of port with trade and transport chain Close relation between port and municipality Enlarged port org.	Port network community Close relation between port network and public authorities on different levels
Port authority's task	Nautical services (1)	(1)- Development of grounds and infrastructure (2)	(1), (2) + Port marketing (3)	(1) to (3) + Network management
Attitude & strategy	<i>Conservative</i> Ports as changing point of transport	<i>Expansionist</i> Transport, industrial and commercial centre	<i>Commercial oriented</i> Integrated transport and logistic centre	<i>Commercial oriented</i> Integrated transport, logistic and information complex

1.4 Research Objectives

Given the context described above, this thesis' main goal is to find out:

- a) How does the increasing transpacific container trade (with Asia) affect the seaport cluster in Vancouver?
- b) In what way are the local port authorities responding (to the emerging development pressure)?

Emphasis is put on terminal improvements and strategies that the local public port authority adapts to confront the highly competitive environment.

1.5 Scope and Limitations of the Thesis

The research questions given in 1.4 above are quite broad. Therefore limitations in terms of scope and depth are necessary. Four major limitations of the research are recognized.

The number of factors that influence the performance of a cluster is huge. This study only deals with cluster specific variables. A focus on these factors can yield new insights, as it has become clear that these variables have a substantial influence on the development of a cluster (Porter, 1990). Other variables, such as technological developments and (inter)national regulations clearly influence the performance of a cluster, but these are not incorporated in the framework.

Second, no attempt is made to critically discuss other relevant schools insights that are required to understand the performance of seaport clusters except that of Michael Porter even though clusters as such have frequently been studied from many different perspectives. Among them, "New Economic Geography" and the "Industrial District School".

Third, the framework to analyze the performance of clusters is only applied to seaports. Seaport clusters are likely to differ substantially from other clusters. Conclusions based on the empirical evidence can therefore not be automatically generalized to all clusters.

Fourth, the study of Vancouver only gives a description of the seaport cluster at one moment in time. The historical background is only provided when clearly relevant. The performance of the cluster over time is not systematically analyzed.

1.6 Project design

This thesis is divided into nine chapters. The following chapter, “Critical Realism”, will discuss views on ontology and epistemology, mainly according to a critical realist philosophy of science, and how these views are transformed into a method of social science research but also how and in what way this thesis will make use of the philosophy. Chapter 3 accounts for how I conducted the study and tries to give the grounds for some of the choices I have made.

Chapter 4 and 5, on the other hand, form the theoretical underpinning that can inform and guide the subsequent empirical investigations. However, the ambition towards theory in this thesis is neither to generate new theories of cluster development or collective action regimes nor to verify existing ones, but to discuss the relevance of certain previously developed concepts and theories in order to gain knowledge that can guide and inform analysis.

Chapter 6-8 represent the concrete part of the research, the Port of Vancouver. Though evolving out of the above sketched by departure, this thesis does not consider the search for driving forces in the Port of Vancouver’s development as an end in itself, but as a means to explain particular outcomes.

Finally, the conclusions of the thesis are elaborated in Chapter 9.

Figure 1.4 below illustrates the structures of the research.

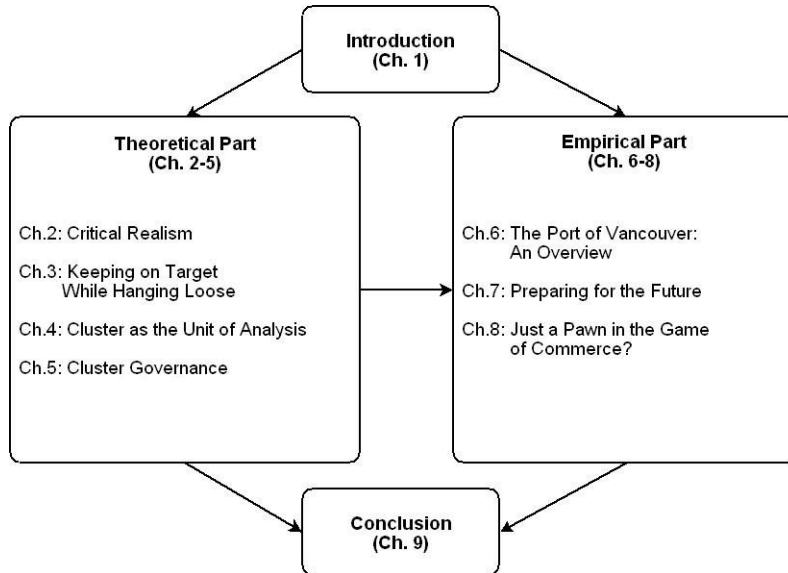


Figure 1.4: The structure of the research

2. Critical Realism

Is it really true, there are elephants, lions too, in Piccadilly Circus?

Jethro Tull 1971

2.1 Introduction

Over the last two decades, human geography has taken a strongly philosophical turn as human geographers have sought new approaches to their research. Many books have appeared which have become classics or milestones in the search for new ways of doing human geography. Among them, David Harvey's (1973) *Social Justice and the City*, Derek Gregory's (1978) *Ideology, Science and Human Geography*, Ley and Samuels' (1978) edited collection on *Humanistic Geography: Prospects and Problems* stand out as early attempts to change our understanding of what human geography is and thus of the ways in which we do research. That is, both the questions to be asked and the ways in which we might try to answer them (Graham 1997).

To put it differently, research involves a great number of choices and for this reason we need to use some kind of criteria in order to judge which the best ones to make. This is exactly what the philosophy of the social sciences offers; - a way of making sense of these complex and difficult choices. Unfortunately, it will not solve all the problems one will normally encounter as you prepare to engage in actual research; there is another issue one must consider. The philosophy of social sciences encompasses a whole series of competing standards and criteria that offer different ways in which the above choices can be understood and assessed. This diversity of rules and standards of scientific knowledge, claims Smith (1998), is a product of the variety of actual research in both the natural and the social sciences. Hence much depends on what the researcher wants to achieve. That is, do you want to establish objective knowledge? Do you want reliable or valid data? And finally, do you wish to communicate your research to a wide audience or a specific scientific community? The answers to these questions will have an impact upon which

perspective within the philosophy of social sciences most closely relates to your own research strategy (Smith 1998).

A main share of port research is undertaken by engineers, statisticians and economics, working quite commonly (though more or less explicitly) in some correspondence with the 'positivist' position in the social sciences. As Askildsen (2002) notes, this means, - depending on the one giving the description -, that the task of the researcher is to collect and organize the data, whereby some sort of "pattern" will reveal itself in the form of universal laws. This thesis, on the other hand, aims at searching for causal factors that may not be empirically observable in such a direct way. For this reason, I decided to draw on *critical realism*, a distinct version of the realist philosophy, originally proposed by Roy Bhaskar. This is, however, neither the place to engage in a full-fledged review of the realist philosophy of science, nor the place to evaluate different varieties of realism or to resolve any philosophical debates it considers. Instead it suffices to make the claim that critical realism has been widely recognized as the hallmark of the Bhaskarian version of scientific realism in the social sciences; - a scientific philosophy that celebrates the existence of reality independent of human consciousness, ascribes causal powers to human reasons and social structures, rejects relativism in social and scientific discourses and re-orientates the social sciences toward its emancipatory goals.

In what follows, I will very briefly introduce the canons of critical realism as a philosophy of science followed by a short presentation of the methodological guidelines for realist research.

2.2 The Real, the Actual and the Empirical

While the empirical realism treats the world as consisting of observable atomistic objects, events and regularities, critical realism distinguishes not only between the world and our experience of it, but between three domains of reality; the *real* or metaphorically, the 'deep' (structures, mechanisms, powers and tendencies), the *actual* (events and states of

affairs) and *empirical* (experience and impression). When critical realists refers to the 'real' this is not in order to claim privileged knowledge of it but to note two things writes Sayer (2000:11). First, "the real is whatever exists, be it natural or social, regardless of whether it is an empirical object for us, and whether we happen to have an adequate understanding of its nature". Secondly, he says, "the real is the sphere of objects, their powers and structures" (2000:11). In other words, whether they are physical, or social, they have certain structures and causal powers according to critical realism, thereby having capacities to behave in particular ways and specific susceptibilities to certain kinds of change (2000). Realists therefore seek to identify both necessity and possibility. That is, what things must go together, and what could happen in the world given the nature of the objects.

So, whereas the 'real' in this definition refers to the structures and powers of objects, the second domain of reality (the 'actual') refers to "what happens if, and when those powers are activated; to what they do, and what eventuates when they do" (2000:12). The 'empirical' level, on the other hand, is defined as "the domain of experience", and insofar as it refers successfully, it can do so with respect to either the real or the actual though it is contingent whether we know the real, or the actual according to Sayer. This level is comprised only of experiences as perceived by us.

While we may be able to observe things such as the structure of an organization or a household, as well as what happens when they act, some structures may not be observable. Observability may make us more confident about what we think exists, *but* existence itself is not dependent on it (Sayer 2000:12).

A crucial implication of this ontology is therefore recognition of the possibility that powers may exist unexercised. That is, the nature of the real objects present at a given time constrains and enables what can happen but does not pre-determine what will happen; "realist ontology [...] makes it possible to understand how [...] the unemployed could be employed, (and) the ignorant could be knowledgeable" (Sayer 2000:12). Table 2.1 summarizes the main elements in critical realistic ontology.

Table 2.1: Three different domains

	Domains of Real	Domains of Actual	Domains of Empirical
Mechanisms	x		
Events	x	x	
Experiences	x	x	x

Source: Bhaskar, quoted in Collier (1994:4)

Next section will move on to talk about causation, - one of the most distinctive features within realism.

2.3 Causation and Causal Analysis

To ask for the cause of something is normally to ask what ‘makes it happen’, what ‘produces’, ‘generates’, ‘creates’ or ‘determines’ it, or more weakly, what enables or leads to it. As soon as we reflect upon such words, it becomes clear that they are metaphors [...] which allude to or summarize an enormous variety of means by which change can occur. [...] And like any description they can, of course, be ‘unpacked’ and replaced by more detailed accounts (Sayer 1992:104).

As explanations, these informal kinds of causal account as shown above are characteristically incomplete, but for dealing with more mundane processes they may be quite adequate. In order to clarify the nature and limitations of these and other types of causal description and explanation it is therefore necessary to proceed to a more formal discussion.

On the realist view, causality concerns not a relationship between discrete objects events (‘cause’ and ‘effect’), but “*causal powers or liabilities* of relations and more generally, their ways-of-acting or mechanisms” (Sayer 1992:104); - people have the causal powers of being able to work, speak, walk, and a host of causal liabilities such as susceptibility to group pressure. But the causal powers inhere not simply in single objects or individuals *but* in the social relations and structures which they form states Sayer and illustrates with a well-known example; “[...] the powers of a lecturer are not reducible to her

characteristics as an individual but derive from her interdependent relations with students, colleagues, employers, etc” (Sayer 1992:105). But powers and liabilities can exist whether or not they are being exercised or suffered as well (i.e. iron is liable to rust even though some pieces never get the chance to). On this view then, writes Sayer (1992), a causal claim is not about regularity between separate things or events but about what an object is like, what it can do and only derivatively, what it *will* do in any particular situation (see Bhaskar 1975);

Hence to say that a person who happens to be unemployed nevertheless could work, given the opportunity, is not to indulge in speculation about what might happen in the future but to say something about what that person’s mental and physical state are like *now*. Causal powers and liabilities may thus be attributed to objects independently of any particular pattern of events; that is, not only when ‘C’ leads to ‘E’, but also sometimes when ‘C’ does not lead to ‘E’ (Sayer 1992:105).

This means that the nature or constitution of an object and its causal powers are internally or necessarily related. That is, if the nature of an object changes then its causal powers will change too; engines lose their power as they wear out, a child’s cognitive powers increase as it grows. This conception of causality as a necessary way of acting of an object does not, as some have supposed, boil down to the virtual tautology that an object can do something because it has the power to do so. Yet, writes Sayer, scientists avoid the tautology by establishing empirically what it is about the substance which gives it this certain power that can be identified independently of the exercise of the power; [...] a well-known example is the explanation of the power of some metals to conduct electricity by the presence of free irons in their structure” (Sayer 1992:106). Similarly, it is surely not a tautology to explain my ability to walk and my ability to fly by reference to my anatomy, musculature, density and shape. Nor is it tautologous to explain the ability of certain people to live off rent by reference to their ownership of land, buildings or minerals.

So, wherever possible, Sayer (1992) asserts we try to get beyond the recognition that something produces some charges to an understanding of what it is about that enables it

to do this. In some cases, we know little about the mechanisms involved. “What we would like in these latter cases is knowledge of *how* the processes work”, he says; “merely knowing that ‘C’ has generally been followed by ‘E’ is not enough. We want to understand the continuous process by which ‘C’ produced ‘E’, - if it did” (Sayer 1992:107). Whether a person actually works might depend on whether there is a job for her him/her. Likewise, whether gunpowder ever explodes depends on its conditions claims Sayer. Hence, although causal powers exist necessarily by virtue of the nature of the objects which possess them, it is contingent whether they are ever activated or exercised. In the latter case, the actual effects of causal mechanisms will again depend upon the conditions in which they work. The relationship between causal powers and their effects is therefore not fixed, but *contingent* in which causal powers exist independently of their effects, unless they derive from social structures. “To say that the relationship of a power to its conditions is contingent is not to suppose that the latter are uncaused, only that they are caused by different mechanisms” (Sayer 1992:107). Causal powers are contingently related to their conditions; when we activate a mechanism for our own purposes we take care to ensure that the conditions under which it operates are those which will produce the desired effect. In order to get the desired results then considerable care is taken to locate suitable configurations of conditions. Sayer exemplifies this with the explosion of a bomb (1992:108); “when it occurs, happens necessarily by virtue of its structure, but it might do so in a variety of conditions. The objects constituting the conditions have their own powers and liabilities, and so whichever conditions hold the results of the explosion will necessarily occur, differing according to whether the objects are cement, water or flesh”.

As can be seen, then, the juxtaposition of necessity and contingency is complex, even in simple events such as this. Figure 2.1 illustrates the relationship between these and their conditions.

Yet it is still up to each substantive social science to discover empirically grounded theories and, to set up their distinctive methodological apparatus as critical realism has primarily been occupied with philosophical issues and fairly abstract discussions, and less

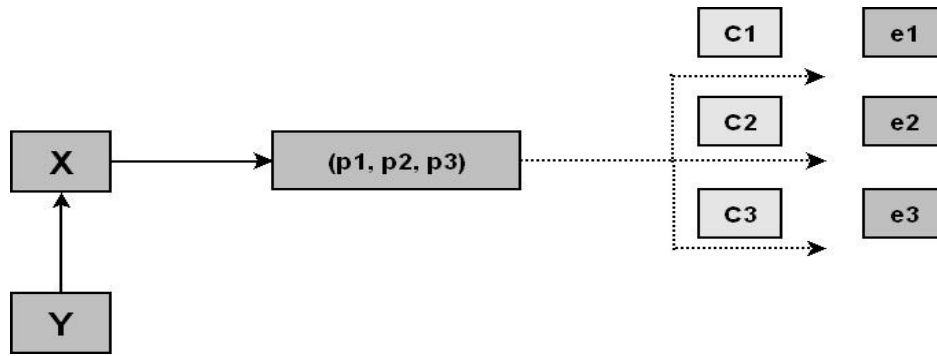


Figure 2.1: The structures of causal explanation

Source: Sæther 1999:23

focus on how to actually carry out empirical research. The real need, then, according to Yeung (1997), “is to achieve a [better] dialectical mediation between philosophy (concerning ontology and epistemology) and the social sciences (concerning theory and methodology)” (1997:53). That is, most practicing realists and human geographers understand the crucial importance of causal powers and generative mechanisms of objects in explanations. But unfortunately states Yeung, precious few attempts have been made to reflect upon the methodological implications; - the basic methodological questions remain: how can things be abstracted, and how exactly should a realist conduct a piece of critical research (Yeung 1997:56)? Rather than providing any comprehensive answers to these tricky, and yet intriguing, methodological questions, I have instead chosen to use critical realism as an **inspiration** in the following and shed light on *retroduction* - one of the three methodological avenues suggested by Yeung in his article “Critical Realism and realist research in human geography: a method or a philosophy in search of a method?” - in the practice of critical realism in this master thesis³.

2.4 Retroduction

The retroduction strategy, - in which an argument ‘moves from a description of some phenomenon to a description of something which produces it or is a condition for it’ (Yeung 1997:59) - , has always been an important part of the process in both Sayer’s and

3. This is not the only method that is compatible with critical realist philosophy but may probably be the most practically adequate method according to Yeung (1997).

Bhaskar's work to identify mechanisms (Sæther 1999). Unfortunately, neither of them gave any method nor answer to how retroduction should be done in practice. This section will therefore try to give a brief overview by focusing on how Charles Ragin's dialogue of ideas and evidence is structured and how it is conducted in social sciences. That is, how ideas shape the understanding of evidence and how evidence affects ideas.

Social research, in simplest terms, involves a dialogue between 'ideas' and 'evidence' claims Ragin (1994). "Ideas help social researchers make sense of evidence, to extend, revise and test ideas. The end result of this dialogue is a representation of social life – evidence that has been shaped and reshaped by ideas, presented along with the thinking that guided the construction of the representation" (1994:55). A major part in the dialogue of ideas and evidence is therefore devoted to the 'analysis' of the phenomena the researcher is studying. Analysis means breaking phenomena (facts or events) into their constituent parts and viewing them in relation to the whole they form. In essence, then, an analysis of a maritime seaport cluster involves breaking it into its key component parts so that it no longer appears to be an amorphous, teeming mass of stakeholders, but rather can be seen as a combination of key elements and conditions (Ragin 1994) that a researcher develops in order to aid the examination of a specific phenomenon, and, thus, are fundamental to social research because they constitute ways of seeing.

The other part of the dialogue of ideas and evidence involves the 'syntheses' of evidence. While analysis involves breaking things into parts; synthesis involves putting pieces together. That is, making connections among the elements that at a first glance may seem unrelated. These connections may lead to further insights into the phenomenon they are trying to understand. The process of synthesizing evidence is therefore an important part of the dialogue of ideas and evidence. Ragin presents this synthesis as a process of forming evidence-based 'images' of the research subject. Figure 2.2 sketches a simple model of the process of social research and explains how the dialogue of ideas and evidence in social research is carried on through analytical frames (which articulate ideas) and images (evidence-based depictions of social life).

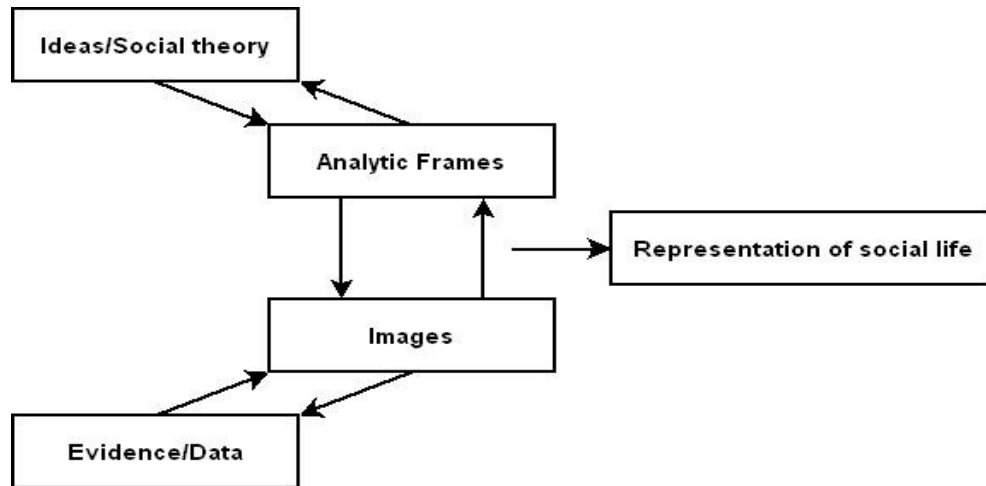


Figure 2.2: Shows the understanding of the process of social research

2.5 Conclusion

This chapter has introduced critical realism by sketching some of the features which distinguish its approach to social science. Rather than attempting to summarize the growing philosophical literature presenting and debating critical realism such literature, I have restricted myself to realism's key features, simply indicating some of the philosophical arguments in its favor.

The chapter began with introducing critical realism's ontology (or theory of what exists) including its distinctions between the real, the actual and the empirical. The chapter then moved on to its distinctive view of causation and causal analysis, followed by a section which shed light on a scientific realist method called retrodution. Rather than being a strict guideline for the practice of critical realism in human geography, I have instead considered critical realism as an inspiration source.

The next chapter will take a closer look at the thesis' research methods and try to give the grounds for some of the choices been made.

3. Keeping on Target While Hanging Loose

I'll tell you one thing. It has been a very interesting conversation with you because I think in the course of conversation it's given me the time to reflect

An interviewee

3.1 Introduction

Practicing human geography is often a matter of choosing horses for courses, and the use of interviews is no exception to this. Interviewing has been described as ‘conversations with a purpose’ (Webb & Webb 1932; Burgess 1984) and, although the conversions vary across a range of structured, semi-structured and unstructured formats, their purpose is to ‘to give casual explanation of production of certain objects or events’ (Sayer 1992:243), or as Silverman puts it; ‘to give an authentic insight into people’s experiences’ (1993:91). While the scientific methods so often associated with the use of questionnaires attempt (often unsuccessfully) to *mirror* the social and geographical worlds of respondents, interviews employ knowingly interactive research so as to gain access to the *meanings* which subjects attribute to their experiences of these worlds (Cloke et al. 2004). The purpose of this chapter is thus to account for how I conducted this intensive study and give the grounds for some of the choices I have made so far.

3.2 Qualitative Interviewing - The Art of Hearing Data

Qualitative research is often less structured than other kinds of social research. The investigator initiates a study with a certain degree of openness to the research subject and what may be learned from it (Ragin 1994:85)

I arrived in Vancouver, in October 2005, for two months of fieldwork. The goal was to understand the Port of Vancouver’s behavior in light of its own history and circumstances

but also in the context of other considerations such as their competitive strategy, relationship to its markets, and the behavior of competitors (collecting the ‘evidence’ or ‘data’ as Ragin 1994 puts it⁴). For this, the decision was taken to interview individuals who were likely to have the desired knowledge, experience and positions⁵ in order to construct a representation about the port business. That is, those considered being influential, prominent, and/or well-informed in the port community (more known as the ‘elites’) and who were willing to divulge that knowledge to the interviewer. This also enabled me to refer to and build upon knowledge gained beforehand about the specific characteristics of the informants, instead of having “to affect ignorance (*tabula rasa*) in order to ensure uniformity or ‘controlled conditions’ and avoid what might be taken as ‘observer-induced bias’” (Sayer 1992:245). But as Susan Smith (1988:22) argues: ‘any attempt on the part of an analyst [geographer] to enter the life world of others is above all, strategic...it makes both moral and analytical sense to expose the power relations inherent...at an early stage of the research’.

A considerable number of various actors have been interviewed. Among these, researchers, - both those in favour and those critical to the Port of Vancouver’s future plans -, public officials, managers, trade analysts, customer-, and operations developers, transport advisors, presidents and CEO’s, business- and system developers, etc. While some of these informants had been contacted to answer only a few questions, other interviews were long in-depth *semi-structured* conversions (interviews based upon checklists to ensure coverage of the required ground), implying that ‘the researcher introduces the topic, then guides the discussion by asking specific questions’ (Rubin & Rubin 1995:5). This way of proceeding gave the interviewees increased opportunity to participate in developing focus and scope of the project by launching thoughts and ideas which may have been neglected by the researcher, as would have been the situation where a detailed interview guide is used. In this way, the informants were able to report on the organizations’ policies, past histories, and future plans from a particular

4. The empirical world is limitless in its detail and complexity. Social research thus necessarily involves a selection of facts.

5. All in all, 25 interviews were taken during the fieldwork. 23 of these were men as *very* few females worked in the maritime industry.

perspective which corresponds with the aim of this thesis: to explain a particular, actual outcome while taking contingencies into account.

At the same time that elite interviews offer unique access to certain kinds of knowledge, the method inherently posed a number of problems during the fieldwork. First of all, it was often very difficult to gain access to elites because they are usually somewhat elusive and busy people operating under demanding time constraints. They are also often difficult to contact initially. A solution to this therefore was to make use of a so-called 'gatekeeper' who, in my case, was a powerful figure within a particular group (Hughes & Cormode 1998). The gatekeeper attempted to structure my access to others, by pointing me towards 'helpful' or 'safe' interviewees who in the judgment of the gatekeeper were appropriate onward contacts. This process made me able to "snowball" further by using one informant to introduce another. As the term implies, this means recruiting gains momentum or 'snowballs' as the researcher builds up layers of contacts (Kvale 1997, Valentine 1997). The strength of this technique was that it helped me to overcome one of the main obstacles to recruiting interviewees, and thereby gaining their trust. It also allowed me to seek out more easily interviewees with particular experiences or backgrounds. Naturally, there are huge pitfalls inherent to the snowball-method *and* to the researcher; - 'the researcher must retain the leeway to choose candidates for interview. Otherwise there is a grave danger that data collected will be misleading in important respects, and the researcher will be unable to engage in the strategic search for data that is essential to a reflexive approach' (Hammersely and Atkinson 1995:134).

A second (and an obvious?) pitfall in doing elite interviews pertains to the relativist epistemology of critical realism. More precisely, while response to a structured interview of narrowly defined questions may pertain more closely to the interviewer's perception of reality, semi-structured interviews, they are on the other hand, more open to a considerable degree for the informant's own perceptions. Hence, "it must be kept in mind that just because the project gains access to key informants of adverse kinds, it does not mean that the researcher will gain immediate access to *reality* if the consequences of being fully honest may be a reduction in responsibility, or even program termination and

job loss” (Askildsen 2002:40). Informants are not “sooth-sayers” as Askildsen puts it and should not be considered as such. In the best case, I have been enlightened by the informants’ balanced conveyance of their perception of reality, in a far worse situation, the interviewees have turned the whole setting around and been using me as a medium to convey their own agenda. In those situations I have been catching lies during the interviews, I have therefore tried to figure out why the informant may have lied to me rather than being upset as lies, evasions and inconsistencies can provide useful information.

A third disadvantage in doing elite interviews is that the interviewer often have to adapt the planned for structure of the interview, based on the wishes and predilections of the interviewed (Marshall & Rossmann 1999). Although this is true with all in-depth interviewing, elite individuals are typically quite savvy and may resent the restrictions of narrow or ill-phrased questions. This leads us to disadvantage number four, which is probably the most complex one in interviewed-based research if you ask me: the locus of control (Schoenberger 1991). The open-ended interview may afford some advantages in this context, although not complete immunity. Because interviews are invented anew each time, they can be wonderfully unpredictable. The person being interviewed may take control of the interview and thereby change the subject, guide the tempo, or indicate the interviewer was asking the wrong questions. In other words, since the likely informants are people accustomed to being in control and exerting authority over others, there is always a risk that the elites will impose his or hers own agenda on the interview and thereby taking charge of it and take it in directions that are not directly relevant to the research or worth lengthy elaboration.

Not surprisingly then, perhaps, working with elites places *great* demands on the ability of the researcher who must establish competence by displaying a thorough knowledge of the topic being researched, while assuming a role that the elite interviewee can accept and trust, - a role that suggests you are knowledgeable and yet non-threatening (in order to discover the world of the interviewee);

[...] interviewers must be conscious and reflective. They must carefully watch and interpret the performance of the subject. Their interpretations must be based on the various cues, clues, and encoded messages offered by the interviewee. This extended use of dramaturgical metaphor perhaps overemphasizes the interview process in which improvisation is at least as important as delivering 'classical' lines (Berg 1989:35).

In other words, being ethical is not only right, but useful in order to encourage participation. That is, letting people know what you are studying, that you want them to participate, that their participation is voluntary, and that, -if they want to-, their answers will be kept confidential. However, introducing yourself as a 'researcher' in a port community does not work as the term itself is not a meaningful category in many interviewees' eyes. This point was made dramatically clear to me, when an informant I was researching asked, "What do you get out of this interview??" He was completely puzzled, as there was no role in his world for someone who was simply trying to understand what was happening in the organization he worked at: "It is just a port. It is just port business", he said. After telling him (once again) the reason why I needed his help and that I had to collect information on the Port of Vancouver in order to write a thesis about it, he nodded his head and agreed. I had suddenly conveyed something from my world that he could understand⁶.

Fortunately a variety of "interviewing strategies" could minimize, if not fully eradicate, the impact of some problems (Marshall & Rossmann 1999). Among these, the most important one was to be well-prepared in advance. By reading previous work on the issues being investigated (i.e. gender issues, elite interviews potential pitfalls, etc.) the researcher can try to avoid some of the problems that others have already encountered. Equally important, preparation is not the be-all and end-all of interviewing. Indeed, one of the key skills is a sensitivity of listening to what is being said, linked with an innate flexibility to permit and encourage encounters with the unexpected (Rubin & Rubin 1995). For these reasons, the idea of the "textbook interview" can be misleading and, at worst, can render interviewing immune to the very inter-subjectivities which lie at the

6. As far as possible, I have attempted to protect my informants from harm when writing up the report. I have even been leaving out exciting material to keep people out of trouble.

heart of the process. Another strategy was to be well-informed about the chosen research topic as the informants are reassured to know that the investigator understands the issues under discussion. This hard job usually pays off in the quality of information obtained as the elites often contribute insight and meaning to the interview process simply because they are intelligent and quick thinking people.

Due to the circumstances as well as the potential disadvantages in using a tape recorder, I chose to rely on my empathy and memory in all of my interviews. There are of course obvious limitations to a reliance on memory for interview analysis; no one's memory is perfect (either is mine), and the longer you wait before writing up the notes, the more you will forget. On the other hand, compared to audiotape recording, the interviewer's immediate memory will include the visual information of the situation as well as the social atmosphere and the personal interaction, which to a large extent is lost in the audiotape recording. More interesting, if you ask me, is that active listening and remembering can work as a "selective filter", and thereby retaining those very meanings that are essential for the topic and purpose of the study. I will now go on to discuss the role of participant observation and secondary data.

3.3 The Role of Participant Observation and Secondary Data

In addition to arrange elite interviews, I attended to *The Vancouver Board of Trade Luncheon Conference*⁷ which gave me extremely valuable information about the Pacific Gateway Strategy and some of the most important topics in the port community. This period of participant observation also helped me become familiar with the setting and vocabulary, - but more important -, to learn the port culture, that is, who gets the best and who gets the worst seats at a conference, who shake hands, and who chats with whom. What I observed is not explicitly referred to in the text, but it has acted as an important guidance and been pivotal in shaping my understanding of the research subject. More important it sharpened my understanding of the community by refining and elaborating

7. "Developing the Pacific Gateway Strategy", November 24, 2005, Pan Pacific Vancouver.

“images” of the research subject and relating these to analytical frames. Having participated and seen the dynamics of the organization myself also increased my confidence regarding the conclusions reached. Participation can of course be problematized, -especially when it comes to the researcher distorting the ‘natural’ unfolding of events. I feel confident, however, that my presence did not alter the course of events as it to a large extent went unheeded. Among about 200 delegates only about 5 knew that I was a so-called ‘outsider’.

In order to get a more general picture of maritime cluster, I have in addition to arrange elite interviews and attended the Vancouver Board of Trade Conference used several ‘secondary data sources⁸’. That is, two planning documents, several company reports, and several cd-rom’s. I have also paid active attention to diverse media such as the Port of Vancouver’s website, Canadian newspapers and even documentaries and movies dealing with the issue. Both the documents and the other sources became more interesting towards the end as I to a greater extent knew what to look for, and in addition had met some of the persons referred to. These secondary sources thus supplemented the data I collected and they were to some extent used for cross examination striving to develop what Yin (1994) terms converging lines of inquiry. According to Yin (1994:92) the conclusions reached are more convincing and accurate if “it is based on several different sources of information, following a corroboratory mode”.

Unfortunately, I could not customize the secondary data sources to my needs. Its quality was sometimes unverifiable, and they were often a cultural artifact produced by administrators with priorities and ways of seeing the world which may be very different from those which underpin the thesis. Take the newspaper articles for instance. They tell us what is going on in the world; and they tell us about important changes taking place in different regions; and often presented as a “neutral” account in which facts are collected, analyzed and reported in an objective fashion, without bias, and in unambiguous and undistorted language. One should therefore seek to establish the purpose behind the

8. ‘Secondary data’ means information which has already been collected by someone else and which is available for you to inspect (Clark 1997:57).

production of the source rather than just accept the record as ‘somehow given’. Factual sources are *not* impartial and autonomous accounts of particular events. As a consequence then, I have tried to treat my documents as “social products”. That is, they must be examined, not simply used as a resource. ‘To treat them as a resource and not a topic is to...treat as a reflection or document of the world phenomena that are actually produced by it’ (Hammersely & Atkinson in Cloke et al. 2004:70).

3.4 Conclusion

This chapter has attempted to account for how this research was conducted and hopefully been giving you some grounds for the reasons that have been made. However, the practice of human geography can never be a neutral exercise. As Cloke et al. (2000:151) suggest,

For good or ill, the very act of entering the worlds of other people means that the research and the researcher become part co-constituents of those worlds. Therefore, we cannot *but* have impact on those with whom we come into contact, and indeed on those with whom we have not had direct contact, but who belong in the social worlds of those we have talked to...Ultimately such matters are entwined with the need to avoid exploitation of research subjects, and to give something back to them through the research process. These are matters of complex negotiation...

The next two chapters (4-5) will form the theoretical underpinning (the ‘ideas’/ ‘social theory’ as Ragin calls it) in this thesis by discussing the relevance of certain previously developed concepts and theories and proceed it to one of its specialized forms – structural analysis. The analytical frames⁹ that guide social research are therefore carefully specified and debated because social researchers including me must be precise when we define and characterize the phenomena being studied. I will begin at the most ‘primitive’ level with an important but under-analyzed way of conceptualize (advancing) the ‘cluster concept’ and later on, ‘cluster governance’.

9. Analytical frames are fundamental to social research because they constitute ways of seeing.

4. Cluster as the Unit of Analysis

At the outset our concepts of concrete objects are likely to be superficial or chaotic.

Andrew Sayer (1992:87)

4.1 Introduction

It is impossible to initiate a qualitative study without some sense of why the subject is worth studying and what concepts might be used to guide the investigation. Qualitative research clarifies therefore concepts (the key components of analytic frames) and empirical categories in a reciprocal manner (Ragin 1994).

In recent years there has been a growing interest in the role of location in the global economy. Some have argued that globalization is rendering the significance of location for economic activity increasingly irrelevant (Cairncross 1998, Greig 2002). Others espouse the opposite view, that globalization is actually increasing rather than reducing the importance of location, “that it is promoting greater regional economies are now the salient foci of wealth creation and world trade” (Martin & Sunley 2003:6). The business economist Michael Porter puts it in this way (Porter 1998c:90):

In a global economy – which boasts rapid transportation, high speed communications and accessible markets – one would expect that location to diminish in importance. But the opposite is true. The enduring competitive advantage in a global economy are often heavily localised, arising from concentrations of highly specialised skills and knowledge, institutions, rivalry, related businesses, and sophisticated customers

At the same time, it is alleged, ‘increasing global economic integration itself leads to heightened regional and local specialization, as falling transport costs and trade barriers allow firms to agglomerate with other similar firms in order to benefit from local external economies to scale, which in their turn are thought to raise local endogenous innovation

and productivity growth' (Martin & Sunley 2003:6). For these and other related reasons, they argue, it has become fashionable within certain academic and policy circles to talk about the 're-emergence of regional economies' (Sabel 1989), the 'location of the world economy' (Krugman 1997), and the rise of a 'global mosaic of regional economies' (Scott 1998).

One of the most influential, - indeed, the most influential- exponent of this emphasis on economic location is Michael Porter, whose notion of industrial or business 'clusters' has rapidly become the standard concept in the field. "As the celebrated architect and promoter of the idea, Porter himself has been consulted by policy makers the world over to help them identify their nation's or region's key business clusters or to receive his advice on how to promote them" (Martin & Sunley 2003:6). Although his discussion is framed directly in terms of the economics of 'business strategy', I still find the concept both inspiring and useful as an alleged key determinant of competitiveness even though the cluster idea has hardly been used to analyze seaports before.

This chapter is organized in three parts. The *first* section will discuss the definition of clusters and the factors that influence cluster performance. *Second*, the chapter will go through some of the main criticism of the Michael Porter's cluster theory provided by Ron Martin and Peter Sunley. *Third*, the chapter will try to get the semantics right and sketch an 'improved' profile of the cluster-based approach that can be used for studying a sea port cluster. That is, to be adequate for a specific purpose it must abstract from particular conditions, excluding those which have no significant effect in order to focus on those which do (Sayer 1992). However, while trying to be inclusive, this chapter is not a complete review of the existing literature in this field and does not aim to cover the new growth theory, or the work on industrial districts.

4.2 About Clusters

The idea of specialized industrial localization is hardly new. Alfred Marshall wrote already at the end of the nineteenth century and included a chapter in his *Principles of*

Economics (1890) on ‘concentration of specialised industries in particular localities’. His characterization of these local concentrations of specialized activity was cast in terms of a simple ‘triad’ of external economies; the ready availability of skilled labour, the growth of supporting and ancillary trades, and the specialization of different firms in different stages and branches of production.

A century later, Michael Porter and a neo-Marshallian *cluster theory* burst the scene. Its origins however, can be traced to his earlier work in the late-1980s and early-1990s on national competitive advantage and international competitiveness (Martin & Sunley 2003) in which he argued that the success of a nation’s export firms depends on a favourable *national competitive diamond* of four sets of factors:

1. *Factor conditions*. The nation’s position in factors of production, such as skilled labour or infrastructure, necessary to compete in a given industry.
2. *Demand conditions*. The nature of home demand for the industry’s product or service.
3. *Related and supporting industries*. The presence or absence in the nation of supplier industries and related industries that is internationally competitive.
4. *Firm strategy, structure, and rivalry*. The conditions in the nation governing how companies are created, organized, and managed and the nature of domestic rivalry (Porter 1998a:71).

However, two additional variables that can influence the national system in important ways; ‘chance’ and ‘government’. The former is occurrences that have relatively little to do with circumstances in a nation and are often outside the power of firms to influence says Porter (1998a). A chance event, such as a demand surge, an input price shift or a breakthrough in basic technologies, creates a discontinuity that nullifies the advantages of traditional leaders and thereby provides a potential for other firms in achieving competitive advantage. A surge in demand for ships gave for instance Korea the opportunity to enter the shipbuilding industry against Japan (Porter 1998a).

The final element necessary to complete the picture is government which plays a prominent role in international competition. Some view government as a passive participant because the determinants of national/regional/local advantage are deeply rooted in its buyers, its history, and other unique circumstances. Porter, on the other hand, does not support this view. The government, he argues, does affect national/regional/local advantage, both positively and negatively, in a partial way. Government, at all levels, can improve or detract from the advantage. This role is seen most clearly by examining how policies influence each of the determinants. Investments in education can change factor conditions. Antitrust policy affects domestic rivalry. From Porter's point of view (Porter 1998a), a central goal of government policy toward the economy is, and should be, to deploy a nation's resources with high and rising levels of productivity, since this is the root cause of a nation's standard of living (see Figure 4.1 below).

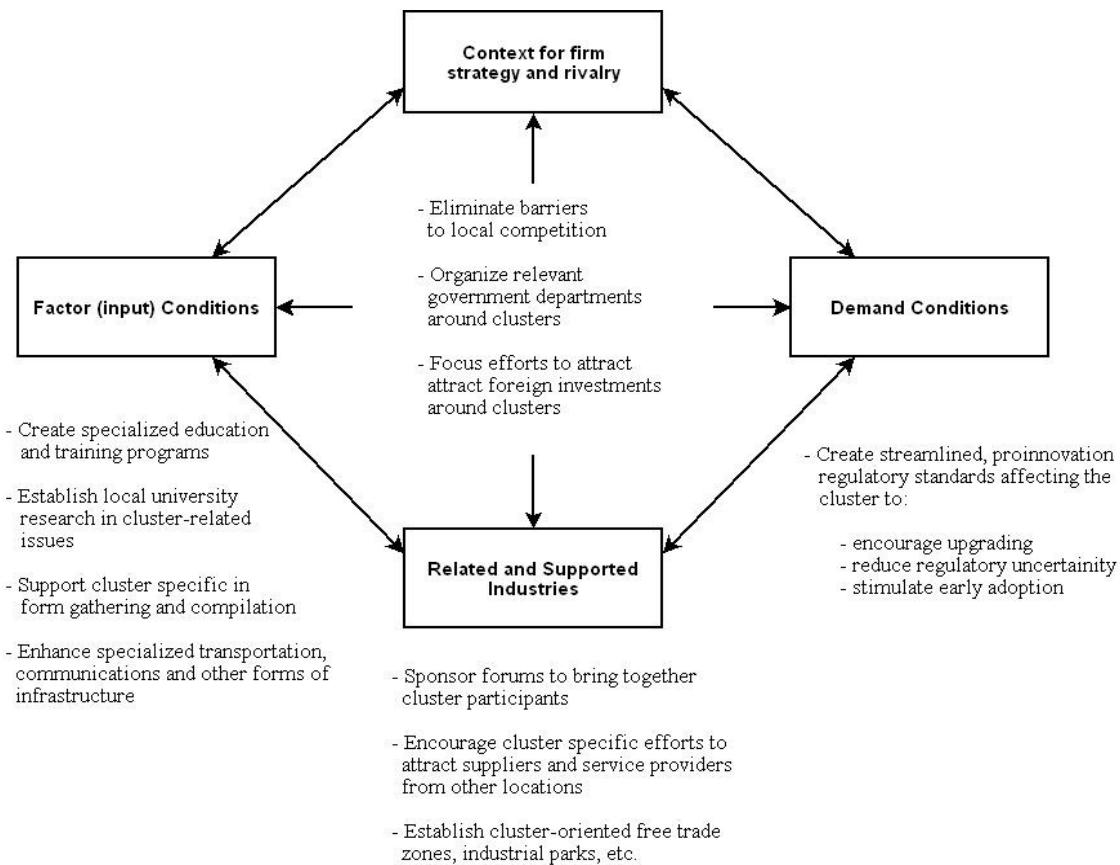


Figure 4.1: Government influences on cluster upgrading
(Source: Porter, 1998c)

The more developed and intense the interactions between these four sets of factors, the greater will be the productivity of the firms concerned (Porter 1998a). The determinants, individually and as a system, create the context in which a local's firms are born and compete;

[..] the availability of resources and skills necessary for competitive advantage in an industry; the information that shapes what opportunities are perceived and the directions in which resources and skills are deployed; the goals of the owners, managers, and employees that are involved in or carry out competition; and most importantly, the *pressures* on firms to invest and innovate (Porter 1998a:71).

Most likely then, states Porter, countries will succeed in industries or industry segments where the national 'diamond', a term he uses to refer to the determinants as a system, is the most favourable. This is not to say that all a nation's firms will achieve competitive advantage in an industry. In fact, several firms will fail because not all have equal skills and resources, nor do they exploit the national environment equally well.

Later on Porter argued, and this has since become his key theme, that the intensity of interaction within the 'competitive diamond' is enhanced if the firms concerned are also *geographically concentrated* or *clustered*. Hence, what originally started out as a way of decomposing a national economy has indeed become a "spatial metaphor" of cluster-development (see Figure 4.2). While Krugman (1997) suggested that some regions tend to be richer or potentially grow faster as a result of a self-reinforcing process in which market economies naturally concentrate economic activity in a few densely populated areas, Michael Porter (1990, 1998) claimed that the performance and development of individual businesses often appear to be determined by the external conditions in the proximate and local environment such as the film and media concentration in Soho, London, and the media concentration in Lower Manhattan, New York.

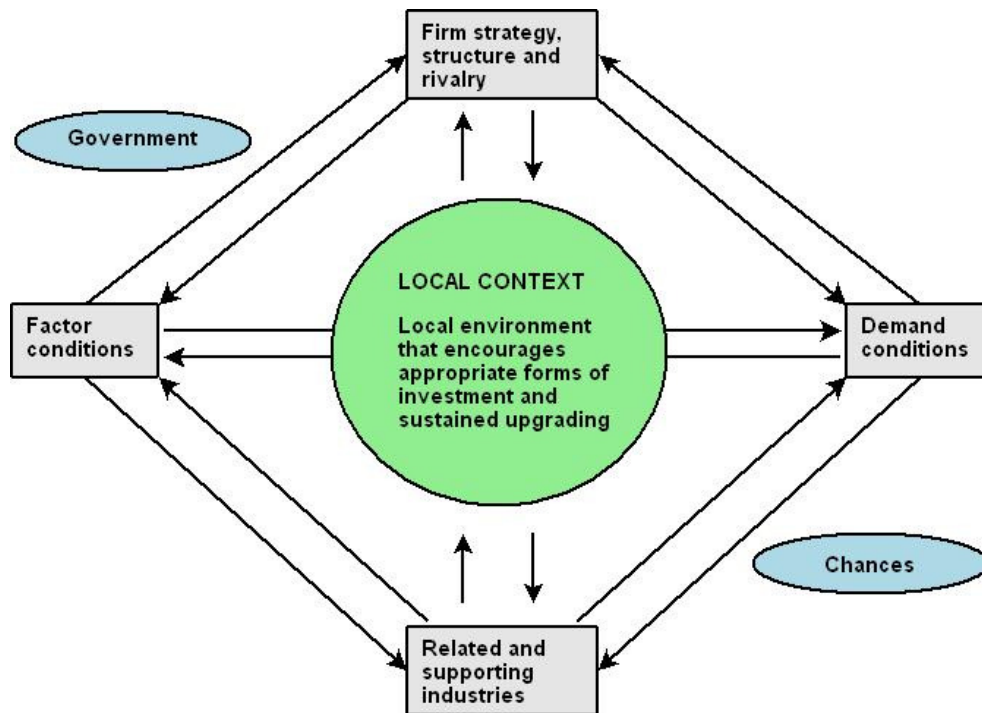


Figure 4.2: Porter's competitive diamond-model' of local industrial clustering
 Source: Porter 1998 (Ch.10)

According to Porter, these examples are not curious isolated incidences. On the contrary, he says, today's economic map of the world is dominated of *clusters*; critical masses of unusual competitive success in particular fields;

A cluster is a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities (Malmberg 2003:150.Emphasizes added).

There are two core elements in this definition. *First*, the firms in a cluster must be linked in some way. That is, clusters are constituted by interconnected companies and associated institutions linked by commonalities and complementarities. The links are both vertical and horizontal. Hence, "a cluster is a form of network that occurs within a geographic location, in which the proximity of firms and institutions ensures certain forms of commonality and increases the frequency and impact of interactions' (Porter 1998a:226).

The *second* characteristic is that clusters are defined by its *geographical proximity* and externalities across industries. The crux then, is that the proximity between different actors makes it possible to create, acquire, accumulate and utilise knowledge a little faster than their cost-wise more favourable located competitors, - thus giving rise to economic benefits accruing from geographic concentration and the likelihood of being noticed and acted upon. Co-location encourages the formation of, and enhances the value-creating benefits arising from, networks of interaction between firms.

But Porter's cluster notion is not the only rediscovery and re-intervention of Marshall's ideas to taken place in recent years. Many have devoted several considerable efforts to studying local industrial specialization and regional development for the past two years or so. So why Porter? And why has his work proved so fashionable and influential while that of economic geographers has not? Why have some of us started to use cluster terminology in preference to our own productivity and innovation?

One possible reason might be the very nature of the concept itself;

'Porter's cluster metaphor is highly generic in character, being deliberately vague (in term of geographical scale as well as internal socio-economic dynamics) and sufficiently indeterminate as to admit a very wide spectrum of industrial groupings and specialization, demand-supply linkages, factor conditions, institutional set ups, and so on, while at the same time claiming to be based on what are argued to be the fundamental processes of business strategy, industrial organization and economic interaction' [...] Rather than being a model or theory to be rigorously tested and evaluated, 'the cluster idea has instead become accepted largely on faith as a valid and meaningful way of thinking about the national economy, as a template or procedure with which to decompose the economy into distinct industrial-geographic groupings for the purposes of understanding and promoting competitiveness and innovation' (2003:9).

A second, and related, reason could be the way in which Porter has conveyed his ideas on clusters. Compared to the general theoretical debates and concepts found in economic geography, his discussion is framed directly in terms of the economics of business

strategy and other useful frameworks for understanding competition that “[...] effectively bridge the gap between theory and practice” (Porter 1998c:2). Cluster theory, he argues, is “not only a tool for managers, but also a microeconomic –based approach to economic development for governments that is closely tied to actual competition” (1998c:7). At the same time, states Martin and Sunley (2003), his easy ‘business- and policy-friendly’ writing style, at once both accessible and commonsense, is [...] “undeniably seductive, and is quite different from the more ‘academic’ discursive approach that characterizes much economic geography writing. Reinforcing this, there can be little doubt that the popularity of Porter’s cluster concept, compared to economic geographers’ work on similar notions, derives in large part from his celebrated international profile as a business economist”(2003:9).

However, seductive though the cluster concept is, there is much about it that is problematic - even though the cluster theory is regarded as one of the most influential nowadays. The next section provides thus a unique critique of the theory by Ron Martin and Peter Sunley (2003).

4.3 A Chaotic Concept or a Policy Panacea?

‘When I use a word’, Humpty Dumpty said in a rather scornful tone, ‘it means just what I choose it to mean – neither more nor less’

Lewis Carrol (1872)

Although the definitional and conceptual elasticity of the cluster concept can be seen as a positive strength, in that it permits a wide range of cases and interpretations to be included, it can be awkward as well. That is, in order to understand their diverse determinations we must first abstract them systemically. When each of the abstracted aspects has been examined it is possible to combine the abstractions so as to form concepts which grasp the concreteness of their objects (Sayer 1992). In *Deconstructing Clusters: Chaotic Concept or Policy Panacea?* (2003), Martin and Sunley question not

only his evaluation techniques but also if the actual constructs of cluster-based economic development exist.

The obvious weakness raised by Porter's cluster definition according to Martin and Sunley, is first of all its lack of clear boundaries, both industrial and geographical. For instance, at what level of industrial aggregation should a cluster be defined, and what range of related or associated industries and activities should be included? How economically specialized does a local concentration of firms have to be to constitute a cluster, and at what spatial scale do they operate? There are probably very few firms that do not have horizontal or vertical links of some sort with other loosely-defined 'geographically proximate' firms. Does this mean, Martin and Sunley ask that virtually every firm could be considered part of a 'potential' cluster? '[...] There is actually no explicit reference in Porter's definitions that clusters are economically specialized entities in the Marshallian sense, yet his examples are, often very narrowly so' (2003:10). The difficulty, then, is not just the boundaries of clusters, as Porter admits are 'continuously evolving'. More fundamentally, the definition itself is a major source of ambiguity and "seems intentionally opaque and fuzzy" (2003:11). 'The lack of precision and consensus has, in fact, acquired such a variety of uses, connotations and meanings that the cluster term has, in many respects, become a 'chaotic concept' of economic localization under a single, all-embracing universalistic notion' (2003:9-10). The problem is that geographical terminology is used in a quite cavalier manner (Martin and Sunley), depending it seems, as Porter himself admits, on what the aim of the exercise is, or the client for whom the analysis is intended. So how, then, does the requirement of geographical proximity enter into the equation as the concept is never defined with precision in Porter's work? To make matters worse, he claims that (Porter 1998a); 'the appropriate definition of a cluster can differ in different locations, depending on the segments in which the member companies compete and the strategies they employ'.

At one extreme, states Martin and Sunley, the term has been used to exemplify national groups of industries that are strongly linked, but dispersed over several different locations within a country, with no obvious major geographical concentrations. At the other extreme, 'the term is used to refer to a local grouping of similar firms in related industries

within a highly spatially circumscribed area- such as the media cluster in Lower Manhattan' (2003:11). In between, Porter himself refers to several regional clusters in the United States. This sort of ambiguous geographical definition allows an unlimited scope in the characterization and application of the concept, Martin and Sunley contend. 'Just how far can the full complexity underpin the cluster concept as the existence appears to be in the eye of the beholder or should we say "creator", and clearly, include no rules or guidelines involved in its use and applicability'(2003:11)?

So where do we go from here? The search of academics to find the miracle cure to enhance competitiveness of industries is clearly an essential ingredient for the formulation of national and regional policies which stimulate the dynamics and keep the clusters viable. But, as we have seen, the abundant research and insights that are available prove, unfortunately, that it is not always easy to translate academics into real world policy measures. The following section will therefore discuss the theoretical understanding provided by Michael Porter from an economic geographic point of view and how this thesis makes use of it.

4.4 Getting the semantics right

Clustering is, as we have seen, a controversial topic which is difficult to define and measure with precision. It has been defined as a "geographically proximate group of interconnected companies and associated institutions in a particular field linked by commonalities and complementarities" (Porter 1998a:199), "a large group of firms in related industries at a particular location" (Swann & Prevezer 1998:1), as "a tendency for firms in similar business to locate close together though without having a particularly important presence in an area" (Crouch & Farwell 2001:163). Some equate clusters and cities, others, more specifically, suggest that the proximity inherent in a cluster extends up to a 'range of fifty miles'. Being abstract then, the cluster term is also a difficult topic to conceptualize simply because it is a 'chaotic concept' (or bad abstraction) as Marx called it (Sayer 1992) and covers an enormous variety of activities which neither form structures nor interact causally to any significant degree. For this reason, a number of

different frameworks are offered. They share similarities and differences. Thus, being able to view the complex and slippery notion of clustering from different angles enables readers to become aware of, and to draw on, the strengths and limitations of each viewpoint.

The cluster theory as presented by Porter truly provides a brilliant way to describe how various types of industrial activity are related. His model of the determinants of competitiveness in cluster identifies a number of mechanisms proposed to foster industrial dynamism, innovations and long-term growth. The point here, according to Malmberg (2003), which Martin and Sunley (2001) fail to acknowledge in their critique, is that the treatment of these factors includes several points that are indeed novel. For instance, the importance of local rivalry is made much more explicit than in previous models of spatial agglomeration. A key insight in classical agglomeration theory is of course that a firm may gain advantages from being close to each other. Rarely, though, has this advantage been attributed to the fact that spatial proximity between rivals will trigger dynamism and growth; “[...] the idea is that local rivalry adds intensity and an emotional dimension to competition that most firms perceive in the global market. The firm down the road is often seen as the ‘prime enemy’, a bit like the rivalry between neighbouring football clubs” (Malmberg 2003:149). Partly because direct comparison is simplified, and partly for reasons of rivalry, firms in a local milieu tend to develop relations of rivalry where benchmarking in relation to the neighbours is more direct. Second, the treatment of the diamond side as a primarily qualitative factor is original. Porter’s account, in contrast to previous models which emphasize access to a large market as an important location advantage, he alerts us that it is the sophistication of demand that matters. That is, if you are interested in long-term competitiveness and innovation (Malmberg 2003).

At the same time, it is easy to agree that there is a good deal of conceptual fuzziness surrounding the cluster issue, such as Martin and Sunley (2001) do in the previous section. There are now so many different varieties of clusters and so many confusing claims about their theoretical basis, form, identification and significance that the concept

is peculiarly elusive and hard to pin down (Malmberg 2002). The feeling that there must be 'more to it than this' is endemic. With a concept as elastic, it has turned out to be extremely difficult to identify empirically the mechanisms that are supposed to account for its existence. "At present the siren of universalism is pulling the cluster concept into shallow waters. It is being applied so widely that its explanation of causality and determination becomes overly stretched, thin and fractured (Martin & Sunley 2003:146). Unfortunately, one might say that Porter himself has contributed to the conceptual 'mess' by presenting different basic definitions in various texts since the 1990s (Malmberg 2003). Therefore, to be meaningful and useful, typologies need to be precise and clear. It is far from clear at what geographical range, and over what geographical range the term 'cluster' operates. And what does Porter actually mean by 'cluster' and 'clustering'? Are they functional or spatial phenomena? That is, there are many situations both in everyday life and scientific practice where such concepts can be used unproblematically as simple categories for descriptive purposes. But a term like 'cluster' creates problems as soon as anyone attributes unitary causal powers or liabilities to the objects falling in that class. Although Porter has given a brilliant description of the mechanisms enhancing productivity and the complex interplay between the factors in the diamond, he never formulated a theory of location. Even though it is obvious that strong clusters will attract companies, particular the most knowledge intensive, there is not a one-to-one relationship between growth in productivity and location attractiveness.

Yet, taken together, it seems to me that clustering is important enough to justify an attempt to track its conceptual underpinnings and empirical status (even if it means that different and perhaps not always compatible accounts are lumped together in an eclectic way into something defined as 'clustering research'). Although the main criticism of the idea cluster is that it lacks precision, this is not, of course, a problem confined to the 'cluster' term, but also to other concepts such as locality and region; [...] 'Porter's view of the sources and nature of technological development, his short prayer to localized processes and the gradual 'networking of the clusters' lay the grounds for the spatial operationalization of the 'regional cluster' as the most practice oriented, but also one of the most market logic led version of the territorial innovation model (Moulaert & Sekia

2003:293). Michael Porter has in fact given some genuine contributions to economic geography from my point of view, and there are several reasons to take the issue of clusters seriously, despite its lack of precision and clarity. One is that spatial clustering is at the very hard core of what research in economic geography is actually all about. Analysis of spatial clustering brings to the fore concepts such as proximity, place and milieu – all focal points for research in economic geography. There is a lot to learn about the role of proximity and place in economic processes by trying to pinpoint the driving forces that make for the agglomeration in space of similar and related economic activities. Second, this task has obviously policy relevance today. Porter's theoretical basis of business clusters has turned out to be an essential ingredient for the formulation of industrial and regional policy throughout the world. As an important element of these policies we find a doctrine saying that regions should specialize and promote the dynamics of spatial clustering in order to gain or sustain competitiveness and prosperity (Malmberg & Maskell 2002).

But in an attempt to get the semantics right, it would be practical if one could collectively strive to establish a cluster-terminology that is free as possible from basic confusion (a more 'careful conceptualization' which no one would refuse as Sayer would had put it). It is indeed "deeply unsatisfactory to develop a scholarly conversation around a core concept – the cluster – the meaning of which various participants in the conversation has different opinions, not in detail but at the level of basic definition" (Malmberg 2003:151). There is nothing inherent in the concept itself to indicate its spatial range or limits, or whether and in what ways different clustering processes operate at different geographical scales. Although the definitional and conceptual elasticity of the cluster concept can be seen as a positive strength, in that it permits a wide range of a cases and interpretations to be included this problem, as Porter himself admits, means that "the geographical terminology can be used on what the aim of the exercise is, or the client for whom the analysis is intended" (Martin & Sunley 2003:12). I am not suggesting that the concept should refer to a particular pre-specified geographical size or scale; but using the term to refer to any spatial scale is stretching the concept to the limits of credulity. That is, if the same externalities and networks that typify clusters do indeed operate at a whole variety

of spatial scales, this surely weakens the empirical and analytical significance of the cluster concept (Martin & Sunley 2003). On the suggestion of Malmberg, then, it might be useful to employ a related term such as '*industry cluster*' instead since the 'c-word' is presumably going to be around for a while. Alternatively, he persists, when we face geographical concentrations of similar or related economic activity, one could preferably use the traditional term '*agglomeration*', or possibly '*spatial (or localized) cluster*' in order to avoid some of the confusion. An approach like this, take point of departure in territorial defined system elaborate more carefully the spatial aspects of the system, even if they are sometimes suspiciously vague about defining the system's particular territorial scale (Malmberg 2003:151).

4.4.1 The Seaport Cluster

Even though the cluster concept has hardly been used to analyze seaports before (see 1.3), this thesis draws upon a modified Porterian version (see Hazendonck 2001) in which the emphasis is on the entire set of organizations that contribute directly to the Port of Vancouver's performance in terms of relative growth rate and market share. In this context, a port can be considered as an interrelated collection of activities performed by various actors connected through these activities. Hence, building upon earlier definitions by Porter (1990, 1998) and Krugman (1991), an adequate understanding of a *port cluster* is thus defined as a "set of interdependent firms engaged in port related activities, located within the same port region and possibly with similar strategies leading to competitive advantage and characterized by a joint competitive position vis-à-vis the environment external to the cluster" (Hazendonck 2001:136). It should be noted that, especially in the regional economics literature, ports are usually studied as elements fully dependent on the larger system within which they operate; typically an intercontinental, origin-destination logistics chain. The focus in this study, however, is not the entire logistics system, but precisely the port cluster as a critical hub and key component in that logistics chain.

4.5 Conclusion

This chapter has discussed the clarifying definition of clusters and the factors that influence cluster performance. I have also gone through some of the main criticism of the Michael Porter's cluster theory provided by Ron Martin and Peter Sunley where they questioned not only his evaluation techniques but also if the actual constructs of cluster-based economic development exist. The last part attempted to get the semantics right in order to sketch an 'improved' profile of the cluster approach (a rational abstraction).

Next chapter will introduce the concept of '*cluster governance*', - another useful and relevant concept I will attempt to clarify and advance.

5. Cluster Governance

5.1 Introduction

The analysis of seaport governance has for a long time been limited to the role of the port authority (Goss 1990, Stevens 1999) and the appropriate mix of public and private investments (see the port reform toolkit of the World Bank 2002). However, notwithstanding the important roles of port authorities, to limit an analysis of cluster governance to an analysis of the port authority as Stevens (1999) does in “The Institutional Position of Sea Ports” might be very shortsighted since it neglects other important actors in the port communities such as the central government and private port operators (i.e. stevedoring firms, cargo handling companies, and terminal operators). In addition to their important role in providing funds for infrastructure development and superstructure, private port operators often acts as a service provider. This has not only a profound impact on management structures and services provided, but also on long-term public participation in port development. Drewry Shipping Consultants puts it like this (Drewry Shipping Consultants 1998:6):

The modern port can be described as *a community of independent enterprises tied together by a common interest in maritime affairs*. Central to this community is an entity known as the port authority, always a regulator, usually a landowner, often a developer and sometimes a terminal operator’ (emphasis added)

This chapter will therefore give a theoretical discussion of cluster governance¹⁰, based on the work by Peter de Langen (2004a, b), and its influence on the performance of seaport clusters. Different coordination mechanisms will be used, - market coordination included. Issues as ‘hold-up’ and ‘hostages’ (Nooteboom 1999) are not discussed.

10. I have chosen to define cluster governance as *the coordination of activities in a cluster*. Jessop (1997: 95) defines governance as ‘collaborative interaction between stakeholders’. In that sense, my definition is more ‘Williamsonian’: that is, starting from an analysis of the roles of different mechanisms of ‘collaborative interaction’.

A framework to analyze coordination in a cluster is developed in the first paragraph followed by a discussion on cluster governance. A concluding section finalizes the chapter.

5.2 Coordination in a cluster

The need for coordination in clusters is undisputed amongst cluster scholars (Harrison 1994). De Langen (2004ba:54) puts it in this way:

Cluster scholars frequently regard clusters as special solutions to a coordination problem. In this stream of literature (the flexible specialization literature, see Piore & Sabel 1984) clusters are regarded as networks of (small) firms in which cooperation is based solely on trust [...] Other scholars as Markusen (1996) question this particular definition but acknowledge the importance of coordination in a cluster.

Different modes of coordination, or to use the terminology of Williamson: modes of *governance* can play a role in clusters states de Langen (see Hollingsworth et al. 1994). He distinguishes therefore six general modes of coordination (see Campbell et al. 1991, Hollingsworth & Boyer¹¹ 1997, and Williamson 1985): markets, firms, interfirm alliances, associations, public-private organizations and public organizations¹². None of the different modes of coordination is ‘structurally superior’ states de Langen (2004a) as “each mode has advantages and disadvantages” (2004a:54). As a consequence, “[...] different modes of coordination are used in a specific domain¹³, to solve different

11. Hollingsworth and Boyer (1997) identify six modes of governance, five of which (firms, markets, interfirm alliances, associations and public organizations) are included in this study. Public private organizations are added and ‘communities’ are omitted, because communities are not designed to coordinate specific activities.

12. Campbell et al (1991) argue that government has such special abilities (such as changing property rights, allocating resources and serving as gatekeepers) that it cannot be analyzed as merely an alternative governance mechanism. Hollingsworth and Lindberg (1985) and Hollingsworth and Boyer (1997) do analyze the state as a governance mechanism. Peter de Langen (2004a) includes public organizations in the analysis of governance when they provide public services (such as education). The legislative role of the government is not included in the analysis.

13. This is a ‘Williamsonian approach’, because each mode of governance has a ‘structural domain’, based on its advantages and disadvantages. However, this does not imply that all modes of governance develop automatically in their ‘structural domain’. Thus, this framework is not sufficient to analyze governance regimes in full detail, but a useful starting point.

coordination problems” (2004a:54). In Table 5.1, an overview is given of different modes of governance, their advantages, disadvantages and ‘domain’. The table below also shows under what conditions the coordination modes adapt (or are adapted) and whether or not the six governance modes are capable of solving a *collective action problem* (this issue is discussed in more detail later) according to de Langen (2004a:55).

Table 5.1: Characteristics of modes of governance

Governance modes	Advantages	Disadvantages	Domain	Capable of solving collective action problem	Mechanisms of pressure
Firms	Smooth coordination	Limited set of capabilities, limited flexibility	Coordination of strongly related economic activities	Not suitable	Market competition Shareholders/ Stakeholders
Market	Flexibility and selection pressure	Coordination beyond price is difficult	Exchange of alternatively available products	Not suitable	Market competition (exit)
Inter-firm alliances	Relatively effective coordination	Reduced flexibility	Coordination of complementary activities that require different capabilities	Only suitable for small groups of firms	Market competition
Association	Pursuing collective goals	Free rider behavior	Pursuing collective goals	Suitable, but problem of incentives	Voice of members
Public/private organization	Combination of public and private competencies	Limited selection pressure, limited accountability	Projects in the public interests that require private involvement	Suitable, but risk of opportunism	Private and public voice
Public organization	Capable of acting in the ‘public interest’	No clear incentives, no selection pressure	Pursuing public interests	Suitable, but information problems and lack of incentives	Public monitoring

Source: de Langen (2004a:55)

Various case studies of clusters (such as Mistri 1999) suggest that the quality of governance in a cluster¹⁴ can differ between clusters. But unfortunately, no satisfactory framework to analyze the quality of coordination in a cluster has been proposed.

According to de Langen two factors determine the quality of governance: i) the level of

14. Quality so defined that a higher quality leads to a better performance of the cluster.

coordination costs (the transaction cost)¹⁵, and ii) the ‘scope’ of ‘coordination beyond price’ (i.e. setting of standards, investing in the labor pool, cooperation in innovation projects and information sharing). See Figure 5.1. below for more information.

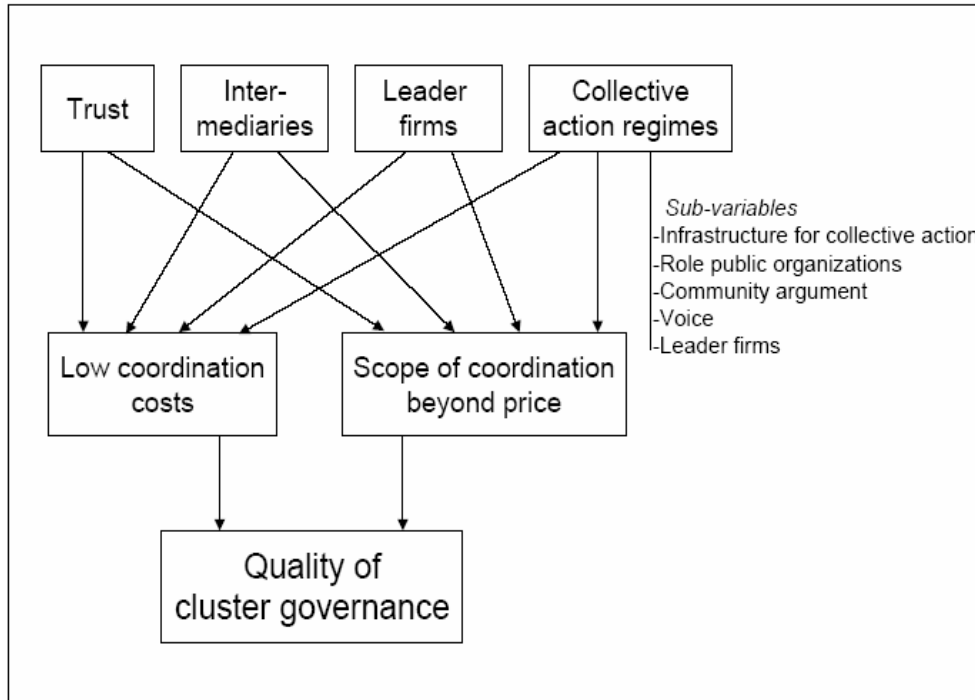


Figure 5.1: The quality of coordination in a cluster

Source: Peter de Langen 2004a:56

But coordination beyond price¹⁶ does not develop ‘spontaneously’ even when the overall benefits of coordination are higher than the overall costs. One possible reason according to Olson (1971) might be that an unequal distribution of benefits can prevent coordination. That is, if one or a few firms are worse off they will obstruct efforts to increase the scope of coordination. Another reason he says, is that opportunistic behavior, such as ‘free riders’, can obstruct coordination. Finally, “uncertain benefits prevent coordination as firms are risk-averse when confronted with uncertainty” (de Langen 2004a:57).

15. These costs include the costs of searching for partners, the costs of specifying contracts, the costs of ‘monitoring’ performance, and the ‘pure’ interaction costs such as time and travel expenses.

16. In this section *coordination* is used for coordination beyond price.

In what follows (5.3 and 5.4), two variables that both enlarge the scope of coordination beyond price and reduce the level of coordination costs will be introduced. That is, *leader firms* and *collective action* as these two are considered as the most important and relevant ones for the thesis.

5.3 Leader firms

Leader firms are according to de Langen (2003) firms with a relatively large impact on other companies in the cluster and the cluster as a whole. Lorenzoni and Badenfuller (1995:147) define leader firms as ‘strategic centers with superior co-ordination skills and the ability to steer change’. Lazerson and Lorenzoni (1999:362), on the other hand, identify ‘focal firms’ defined as ‘companies that occupy strategically central positions because of the greater number and intensity of relationships that they have with both customers and suppliers’. The most prominent outcome of this position is the role these focal firms play in *innovation* claims de Langen (2003:6) in which “leader firms can act as *lead users* [...] that triggers innovation processed with suppliers”.

In the above- mentioned studies on leader firms, their effects on the cluster as a whole are recognized, but the effects of leader firms on other firms in the cluster are not analyzed. Albino et al. (1999) stress therefore the importance of a leader firm for the development of other firms in the cluster in which leader firms can be *enablers* for the *internationalization* of other firms in the clusters. On the basis of ‘many cases’, they argue that ‘leader firm internationalization can be considered the main impulse for district internationalization’ (Albino et al. 1999:57). In this sense, leader firms act as ‘launching customers’ for the internationalization of their suppliers or sell products from the cluster in foreign markets. Other scholars have also recognized that the development of small firms depends to some extent on the presence and behavior of a larger firm with strong co-ordination skills (de Langen 2003).

In other words, leader firm investments encourage to innovation, enable internationalization of other firms in the cluster and improve the quality of the labour

pool. In these ways, leader firms contribute to the competitiveness of other firms in the cluster and, as a consequence, the cluster as a whole. Peter de Langen defines therefore leader firms as follows (2003:7):

Leader firms are firms that have - due to their size, market position, knowledge and entrepreneurial skills - the ability and incentive to make investments with *positive externalities* for other firms in the cluster (Emphasis added).

Investments of (leader) firms with substantial *network* externalities include investments in innovation and internationalization. The benefits of both innovation and internationalization spread to all ‘members’ of the network. Three investments with substantial *cluster* externalities are identified: investments in training and education, knowledge and information infrastructure, and finally an infrastructure for collective action. These investments improve the competitiveness of the cluster. Figure 5.2 illustrates these effects and the resulting positive effect of leader firm behavior on the competitiveness of clusters.

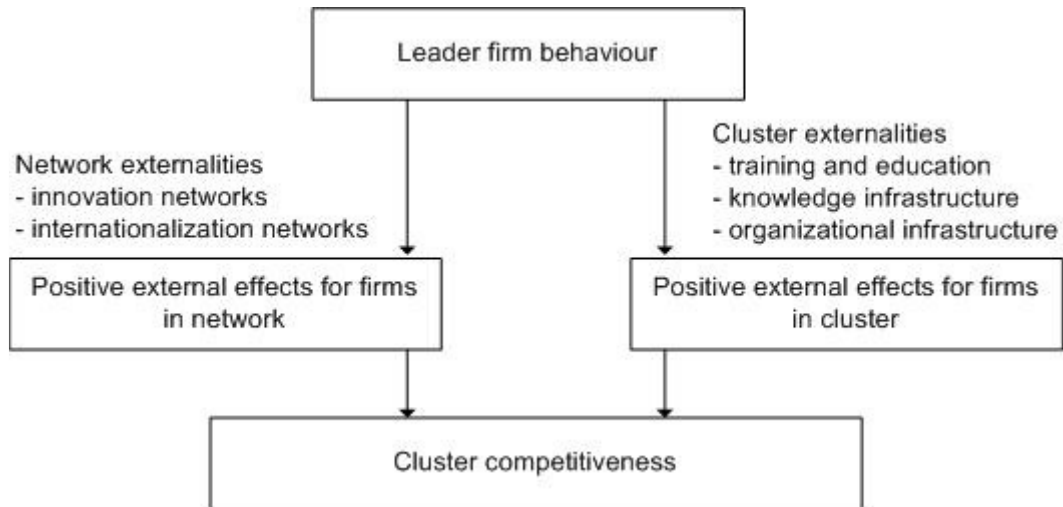


Figure 5.2: Network and cluster externalities of leader firm investments
 Source: Peter de Langen (2003:8)

The positive external effects can simply be ‘side effects’ of investments of large firms that are not relevant for the investment decision of these large firms. Especially large firms make investments with substantial ‘incidental’ positive externalities claims de

Langen (2003). But creating externalities can also be a part of a *strategy* of large firms. In this case he says, “[...] leader firms can take the externalities into account in their decision process. Leader firms can have such a strong market position that a large part of the benefits of a more competitive network/cluster end up ‘in their pockets’” (2003:8).

Leader firms can also have an incentive to make investments with shared benefits, but not a sufficient incentive to invest by themselves (de Langen 2003). Such investment projects, provided that shared benefits exceed shared costs, face a ‘collective action problem’ (Olson 1971). For such investments, a financial arrangement to share costs is necessary. Given their position as prime beneficiary, leader firms have the incentive to play a leading role in devising such arrangements. The next paragraph will take a closer look at collective action regimes.

5.4 Collective action regimes

5.4.1 The Problem of Collective Action

“The ‘problem’ of collective action involves almost every aspect of an advanced economy but more important it is relevant for all clusters” (de Langen 2004a:61). Even the formation of a firm and its operation in an oligopolistic industry can be viewed as a collective action problem (Sandler 1992). To put it differently, even though cooperation to achieve *common* goals (such as marketing and education) would be beneficial for all organizations involved in a cluster, such cooperation does not always develop spontaneously since individual firms can ‘free ride’¹⁷ on the cooperative efforts of other firms. That is, if members of a large group rationally seek to maximize their personal welfare, they will *not* act to advance their common or group objectivities unless there is coercion to force them to do so, or unless some separate incentive, distinct from the achievement of the common or group interests is offered to the members of the group

17. In a broad sense, a free rider is anyone who contributes less than his or hers true marginal value derived from a non-excludable public good. In doing so, they save income that could have been used to buy other excludable goods (Sandler 1992).

individually on the condition that they help bear the costs or burdens involved in the achievement of the group objectives (Olson 1971). Thus, *collective action* does not arise. In other words, “collective action regimes” (CAR)¹⁸ is not by definition an ‘efficient’ system and do not easily adapt states de Langen (2004a:61):

Inefficient collective action regimes reduce the performance of a cluster, but there is no process of ‘selection and adaptation’ that leads to the survival of effective regimes only. A regime is *path dependent* and relatively stable over time, because [...]energy and capital have been invested in a regime and these investments are ‘sunk costs’ that prevent adaptations of a regime and second, a regime defines the ‘rules of the game’ and becomes taken for granted.

As a result then, collective action regimes differ substantially between countries, industries and clusters (de Langen 2004a).

5.4.2 The Roles of Modes of Governance in Collective Action Regimes

Collective action arises when a large number of firms in a cluster cooperate to further the interests or well-being of its members states Sandler (1992). Associations, public private partnerships and public organizations are therefore governance modes better equipped to solve collective action problems (2004a:62) than markets, individual firms and inter-firm alliances. To illustrate this phenomenon, I have chosen to rely on Olson’s work on collective action regimes in “The Logic of Collective Action” from 1971.

Olson (1971) distinguishes three kinds of groups: ‘privileged’, ‘mediate’ and ‘latent’ groups. ‘The small privileged group’, he says; ‘can expect that its collective needs will probably be met one way or another, and the fairly small (intermediate) group has a fair chance that voluntary action will solve its collective problems, but the large latent group

18. In this context, a regime can be defined as a relatively stable collaborative agreement that provides actors with the capacity to overcome collective problems (see Mossberger & Stoker 2001 for a similar definition).

cannot act in accordance with its collective interests so long as members of the group are free to further their individual interests' (Olson 1971:58).

The "intermediate" group, however, is a group in which no single member gets a share of the benefit sufficient to give it an incentive to provide the good itself, but which does not have so many members that no one member will notice whether any other member is or is not helping to provide the collective good states Olson (1971:50). In such a group a collective good may, or equally may not, be obtained, but no collective good may ever be obtained without some group co-ordination or organization. The analog to atomistic competition is the very large group, the 'latent group'. It is distinguished by the fact that, if one member does or does not help provide the collective good, no other member will be significantly affected and therefore none has any reason to react. Thus, an individual in a 'latent' group, by definition, cannot make a noticeable contribution to any group effort, and since no one in the group will react if some makes no contribution, they have no incentive to contribute according to Olson. For that reason, 'large or latent groups have no incentive to act to obtain a collective good (i.e. cluster marketing) because, however valuable the collective good might be to the group as a whole, it does not offer the individual any incentive to pay dues to any organization working in the latent group's interest, or to bear in any other way any of the costs of the necessary collective action' (1971:51). Only a separate and selective incentive or a 'sense of community' - argument (see Bennet 1998) will therefore stimulate a rational individual in a latent group (i.e. an organization) to act in a group-orientated way. In a *public private organization* (i.e. the Port of Vancouver), however, activities are said to be best pursued jointly when both public and private interests are represented in an organization and both sides are willing to contribute financially to the activities of public private bodies. Examples of this include knowledge - and education projects. *However*, since public private bodies have relatively high set-up costs and uncertain pay-offs (see de Langen 2004a), they can only be developed when governments provide substantial support.

The domain of *public organization* on the other hand, is often limited to those activities where private initiative is not likely to yield socially desirable outcomes and regulations

also do not lead to socially desirable outcomes. That is, activities such as safety and planning are generally regarded as inside the ‘public domain’ (de Langen 2004a). Figure 5.3 summarizes an overview of modes of governance and their role in a collective action regime.

A collective action regime: a mix of modes of coordination	
Markets	No role in regimes, not capable of ‘coordination beyond price’.
Hierarchies	Develop spontaneously and are in general efficient. Specific group, leader firms, contribute to collective action regimes.
Alliances	Can develop spontaneously if a relatively small number of firms benefit from collective action and these benefits can be clearly defined and measured.
Associations	Develop when community argument is valid. Substantial contribution to collective action regime. Efficiency depends on voice.
Public-private bodies	Development depends on trust. Substantial contribution to collective action regime. Efficiency depends on monitoring.
Public bodies	Potentially substantial contribution to collective action regime. Efficiency depends on monitoring, public management.

Figure 5.3: The role of various coordination mechanisms in a regime

Source: Peter de Langen 2004b:65

5.4.3 The Quality of a Collective Action Regime

Five cluster specific variables that influence the quality of a collective action regime can be identified (see de Langen 2004a for a detailed discussion). Various actors have to contribute resources to the regimes. These resources can be financial and managerial, but also ‘political’ and relational. The more resources are invested in a regime, the higher the quality of such a regime. A *first* variable relevant to the quality of regimes is the presence of leader firms. Such firms have incentives and resources to invest in improving various

regimes, and can play a leading role in the development of coalitions. Therefore, they are important for increasing the quality of a collective action regime (Olson 1971).

Second, the participation and activities of public organizations influence the quality of a regime. Public organizations frequently contribute financially to collective action regimes (Porter 1990). *Third*, the presence of an organizational infrastructure for collective action, which enables cooperation and thus serves as a means of gathering the required resources, is relevant. The infrastructure for collective action consists of associations, public–private organizations, and the internal network structure of clusters. These do not develop automatically; as various types of trust are required (Nooteboom 2002) to reduce the transaction costs of co-operation, and to overcome static arguments against getting involved in any type of co-ordination beyond market price transactions between firms. Once developed, organizational infrastructure for collective action provides a basis for creating and developing effective regimes.

The *fourth* variable adding to the quality of a regime is the presence of a community argument. A stronger willingness of the ‘port community’ to develop effective regimes leads to better coalitions. *Finally*, the voice of individual firms contributes to the quality of a regime. The voice of private firms increases the pressure on associations, public and public–private organizations (that face no ‘market selection pressure’) to be effective. This pressure enhances the performance of these organizations.

5.5 Conclusion

This chapter has been discussing two variables of cluster governance based on Peter W. de Langen’s work on seaport clusters: “leader firms” and “collective action”. To sum up:

- Leader firms generate positive external effects for firms in their network, mainly by encouraging innovation and promoting internationalization.

- Leader firms generate positive external effects for firms in the cluster, mainly by organizing investments in the training and education infrastructure, the innovation infrastructure and the infrastructure for collective action.
- The more resources are invested in collective action regimes, the better the performance of a cluster. Five variables influence the amount of invested resources: the role of leader firms, the role of public organizations, the presence of an infrastructure for collective action, the presence of a community argument and finally, the use of voice.

Equally important is that this chapter represents an important crossroad. That is, while Chapter 1-5 developed theoretical categories to better understand the necessary internal relations that form the structures by establishing conceptual boundaries around the evidence-based image (*the analytical frame*), the following chapters (Chapter 6-8) will attempt to give an account of different events and their consequences more known as the ‘concrete’ part of the research process, -partly the result of actions done by individual actors and partly the result of structural conditions. That is, while abstract theory analyzed objects in terms of their constitutive structures as part of wider structures and in terms of their causal powers, concrete research on the other hand, aims to look at what happens when these combine. It is important to understand that in social research, the dialogue of ideas and evidences (*social representation*) appear to audiences as finished products, complete with images and frames. However, the finished product results from a long process. That is, there is an interplay of possible frames and potential images in the construction of every representation.

Next chapter (Ch. 6) will attempt to give the reader an overview of the Vancouver port business before presenting the main analysis in Ch. 7-8.

6. The Port of Vancouver: An overview



West End, Vancouver

6.1 Introduction

Like the economies of other areas around the world, the province of British Columbia (see map below), is in a period of transition - marked by changing industrial structures and greater integration with the international economy. At the same time, as global economic integration has intensified, international trade has become more important for meeting the demands of British Columbia's (B.C.) businesses and consumers, as well as for providing markets for goods produced in B.C. (Greater Vancouver Gateway Council 2003).



Figure 6.1: The Province of British Columbia

Source: Wikipedia

Finally, as economic globalization extends to countries previously on the periphery of the international economy - most strikingly the developing and emerging economies in Asia - there has been a change in the composition of economic trading partners for firms in B.C. and other parts of Canada. Long being a key gateway between the Asian and North American economies, and a critical node in the transportation complex that integrates the North American economies, B.C. is particularly affected by the globalization of economic activity. The growing importance of Asia as a global production site and North American trading partner has generated greater and more challenging demands on the transportation structures that integrate the Asian and North American economies. The gateway function historically served by B.C. has become even more important for growth and stability of the North American economies, as well as for the economic health of the province itself.

The gateway function played by British Columbia is evident in two ways. The first, illustrated in Figure 6.2 shows the scale of trade and cargo movement from Asia to the B.C. economy. While trade with Asia accounts for less than 10% of all Canadian trade, it accounts for approximately 35% of British Columbia's trade, 55% of cargo movements through the Port of Vancouver, and 95% of container movements through the port (Greater Vancouver Gateway Council 2003).

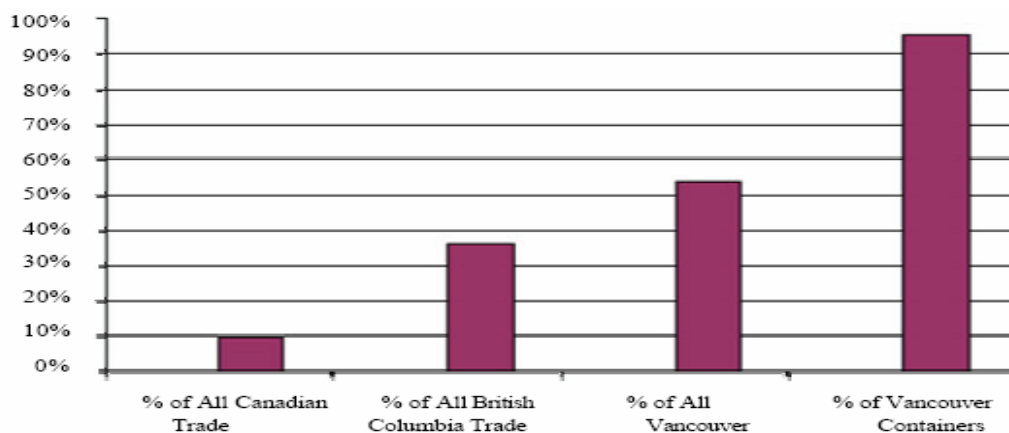


Figure 6.2: Asian Percentage of Total Trade by Dollar Value, 2002¹⁹

19. Source: Comprised from Statistics Canada, International Trade Data, and Vancouver ports. Note: Shipments to Asia also occur from other ports in the region, although they did not have destination statistics available on a comparable basis for this graph.

The second key indicator of B.C.'s role as a gateway between the Canadian and Asian economies is the high number of Asian imports for the entire Canadian economy handled in B.C. This is illustrated in Figure 6.3, which shows the proportion of Asian imports coming through BC. From 1995, when just over 20% of the dollar value of all imports from Asia cleared Canadian customs through B.C., this number had raised to a total of more than 30 % by 2002 (Greater Vancouver Gateway Council 2003). Most of the remainder of Asian imports comes into Canada through the US or directly to international airports throughout Canada.



Figure 6.3: Portion of Total Value of All Canadian Imports Entering through British Columbia, Growth 1993-2003²⁰

Source: Greater Vancouver Gateway Council 2003

These trends will be magnified in the coming years, as developing and emerging economies in Asia become more central to global production and trade. Although the proportion of B.C. total exports destined for Asia fell during the 1990s when Japan's economic problems slowed its consumption of imports, the decade saw the rise of two new important Asian trading partners -China and Korea-, which emerged as the third and

20. This graph shows BC's share of Canadian imports in terms of dollar value; it is important to note that BC's share by weight are much higher. Source: Statistics Canada (International TradeData) and Vancouver ports.

fourth largest destinations for B.C.'s exports. Given the favorable long-term growth prospects for these and other Asian economies, North American trade with Asia is likely to grow for the foreseeable future, a situation that B.C. is highly situated to exploit according to the Vancouver Gateway Council. This puts B.C. in an unusual and enviable position. Contrary to other local economies around the world which struggle to *find* their niche in the global economy, British Columbia can capitalize on and expand its *existing* role as a logistical and cultural link between North America and Asia. The ability of B.C. to create transportation and economic structures to keep pace with these changes will therefore have a profound effect on the long-term economic health and employment structures within the province. The challenges however as you will see are immense since China's economic growth has been nothing short of incredible and it is expected to continue.

This chapter will try to give the reader a brief introduction to the Port of Vancouver. It starts with placing the Port geographically, followed by a paragraph describing its role as a job generator before presenting Vancouver's maritime cargo industry. Finally, a short recapitulation will demonstrate whether or not the Port of Vancouver *is* a seaport cluster by introducing some of its stakeholders.

6.2 The Port of Vancouver

Burrard Inlet²¹ differs from most of the great sounds of this coast in being extremely easy to access to vessels of any size or class, and in the convenient depth of water for anchorage which may be found in almost any part of it; its close proximity to Fraser River, with the great facilities for constructing roads between the two lakes, likewise adds considerably to its importance

Captain George Richards 1864 (in Armitage 2001)

21. *Burrard Inlet* is a relatively shallow-sided coastal fjord in southwestern British Columbia named by Captain George Vancouver in June 1792, after his friend Sir Harry Burrard. The inlet runs almost directly east from the Strait of Georgia to Port Moody and is urbanized on most of its shores (Armitage 2001).

Vancouver's prime geographic location on the southwest coast of British Columbia positions the Port of Vancouver²² as North America's gateway. The Port is a safe, year-round, all-weather; naturally deep harbour with 233 km of coastline extending from Point Roberts at the Canada/U.S. border through Burrard Inlet to Port Moody and Indian Arm and includes 25 major marine cargo terminals which collectively offer 57 berths, post-Panamax capacity and on-dock rail facilities (Economic Impact Update 2005). In the map below three of its newly expanded and ISPS compliant container terminals are shown: *Centerm*, *Vanterm* (located in Burrard Inlet), and *Deltaport* at Roberts Bank (35 km from Vancouver's city centre).

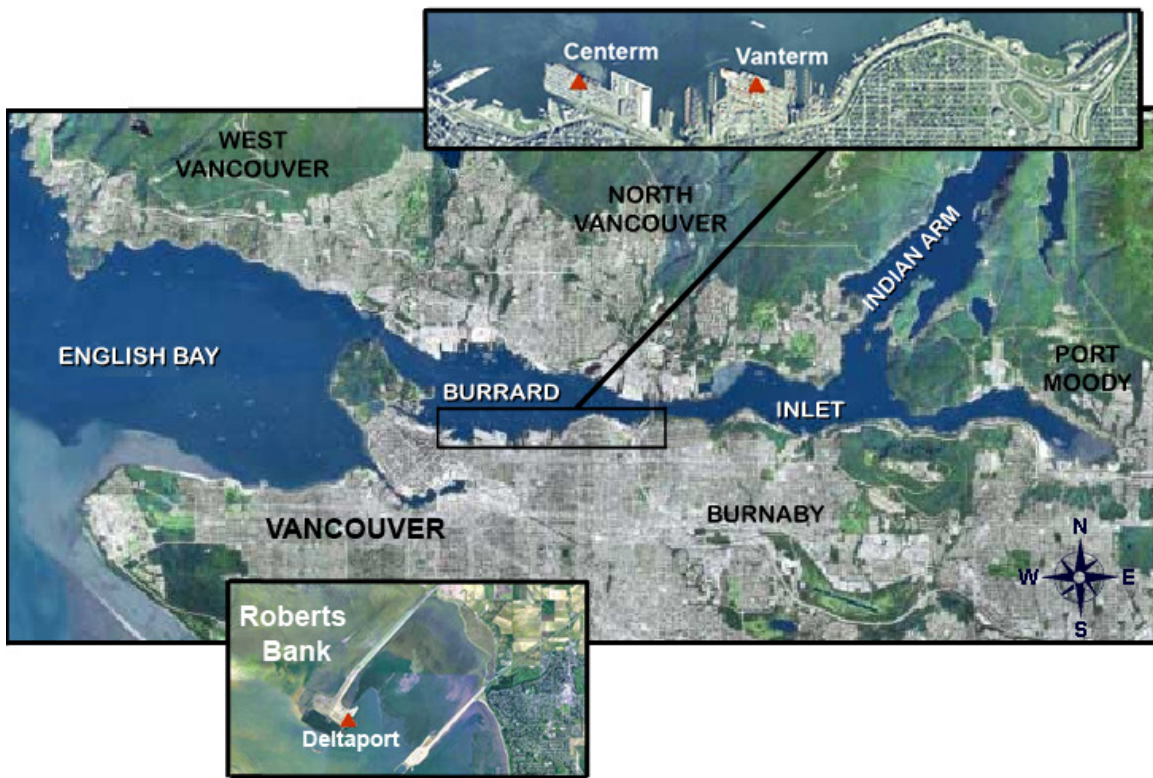


Figure 6.4: The Port of Vancouver's three container terminals
 Source: Author's own work

22. The Port of Vancouver is managed by the Vancouver Port Authority (VPA) established on March 1, 1999 by the *Canada Marine Act* as the successor organization to the Vancouver Port Corporation.

6.3 The Port of Vancouver as a Job Generator

The Port of Vancouver is a major generator of jobs in Greater Vancouver, Western Canada and across Canada. An estimated 30,100 direct jobs are generated by Port of Vancouver activities, equivalent to almost 26,500 direct person years of employment²³. As can be seen in Table 6.1, the largest of these sectors is maritime cargo which generates over 21,000 direct jobs (19,800 direct person years). The second largest sector is cruise which generates close to 5,600 direct jobs (3,850 person years). When multiplier effects are considered (indirect and induced impacts), the total employment impact of the Port of Vancouver across all five sectors is 69,200 jobs or 60,600 person years of employment (InterVISTAS Consulting 2005).

Table 6.1: Jobs in the Port of Vancouver's Five Employment Sectors

Sector	Direct	Indirect	Induced	Total
Maritime Cargo	21,100	15,400	12,400	48,800
Cruise Industry	5,600	3,900	3,700	13,200
Capital Investment	1,500	800	800	3,100
Ship Building and Repair	725	250	325	1,300
Non-Maritime	1,300	900	700	2,900
Total Jobs	30,100	21,200	17,900	69,200
Total Person Years	26,500	18,550	15,600	60,600

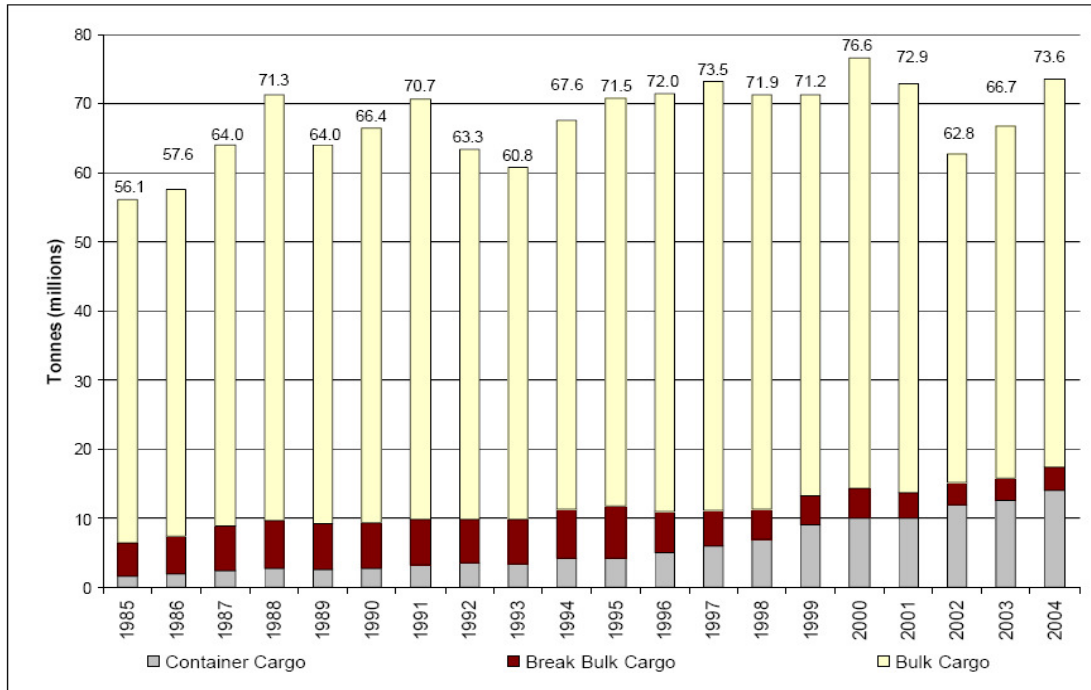
Source: InterVISTAS Consulting 2005

6.4 Maritime Cargo Traffic Volumes through the Port of Vancouver

The total volume of maritime cargo shipped through the Port of Vancouver in 2004 was 73.6 million tonnes, as shown in Figure 6.5. This traffic is slightly below the peak traffic level of 76.6 million tonnes experienced in 2000, but 2004 marks the second consecutive year in which the total volume of traffic handled by the Port of Vancouver has

23. This employment is generated by five Port related sectors – maritime cargo, cruise industry, capital investment in Port facilities, shipbuilding and repair and non-maritime enterprises.

increased²⁴. From 2000 to 2002, total traffic declined 18%, equivalent to 13.8 million tonnes, due largely to the global recession. However, since 2002 the total volume of cargo shipped has rebounded strongly, increasing 10.8 million tonnes in two years, an increase of approximately 17% (InterVISTAS Consulting 2005).



Source: Port of Vancouver Statistics 1985-2004.

Figure 6.5: Volume of Port of Vancouver Cargo (1985-2004)

*Bulk cargo*²⁵ makes up the majority of cargo tonnage passing through the Port, accounting for 77% of total tonnage in 2004. *Break bulk*²⁶ on the other hand, accounted for only 4% while containerized cargo²⁷ accounted for 19% of total cargo (InterVISTAS Consulting 2005).

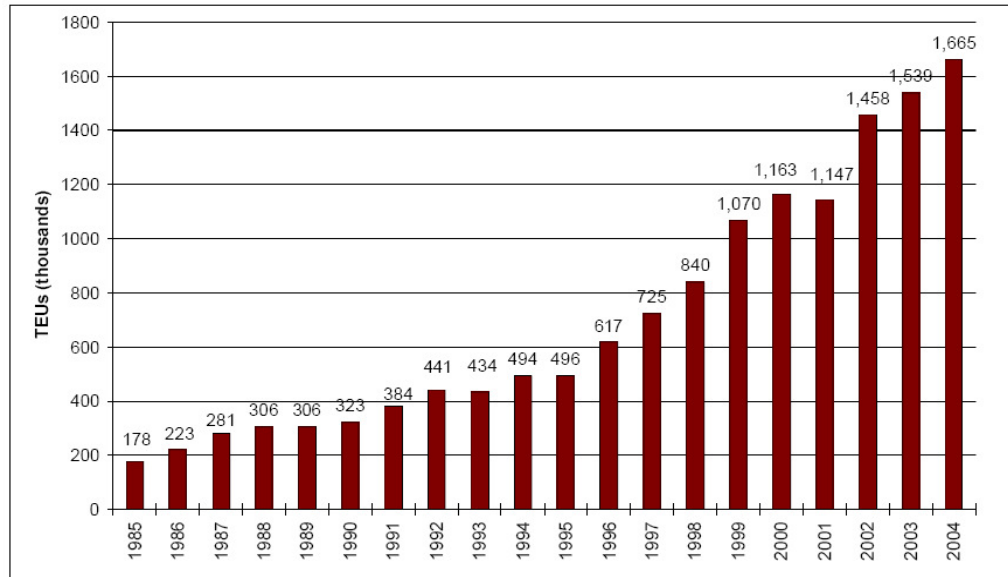
24. The total volume of maritime cargo shipped through the Port of Vancouver in 2005, was 76.5 million tonnes. (Foreign exports = 64.5 million tonnes. Foreign imports = 8.4 million tonnes. Domestic traffic = 3.6 million tonnes).

25. *Bulk cargo*: That which is generally shipped in volume where the transportation conveyance is the only external container; such as liquids, ore, or grain (<http://www.about.com>).

26. *Break bulk*: Any commodity that, because of its weight, dimensions, or non-compatibility with other cargo, must be stowed directly into a ship's hold (<http://www.about.com>).

27. *Container*: A truck trailer body that can be detached from the chassis for loading onto a vessel, a rail car, or stacked in a container depot. Containers may be ventilated, insulated, refrigerated, flat rack, vehicle rack, open top, bulk liquid, dry bulk, or other special configurations. Typical containers may be 20 feet, 40

Containerized cargo has been the fastest growing and probably the most fascinating segment at the Port of Vancouver (see Figure 6.6): Container TEUs²⁸ have increased 43% since 2000, and 835% since 1985. To put this into perspective, overall traffic has increased 31% since 1985.



Source: Port of Vancouver Statistics 1985-2004.

Figure 6.6: The Port of Vancouver Containerized Cargo TEUs (1985-2004)

With respect to tonnage, an estimated 14.1 million tonnes of goods were shipped via container through the Port of Vancouver in 2004. This represents a 41% increase from the amount shipped in 2000. Wood pulp is currently the largest single commodity that was containerized at the Port of Vancouver in 2004 and thereby overtaken lumber, with approximately 1.6 million tonnes shipped in 2004, an increase of 28% from 2000 (InterVISTAS Consulting 2005).

Containerized cargo at the Port of Vancouver is, however, much less concentrated than bulk and break bulk freight. The top three commodities account for only 29% of total

feet, 45 feet, 48 feet, or 53 feet in length, 8 feet or 8.5 feet in width, and 8.5 feet or 9.5 feet in height (The Worldbank, 2002).

28. *Twenty-foot equivalent units (TEUs)*: Container size standard of twenty feet. Two twenty-foot containers (TEUs) equal one FEU. Container vessel capacity and port throughput capacity are frequently referred to in FEUs or TEUs (The Worldbank 2002).

container volume, compared to 70% and 90% of bulk and break bulk volume, respectively. This aspect of the breakdown reflects the advantage of containerization. Containerization makes the consolidation of multiple shippers' goods into a single container possible, and so the export and import of goods by sea a cost competitive option (InterVISTAS Consulting 2005).

6.5 The Port of Vancouver as a Seaport-cluster

Not only does every economic activity have to be located somewhere; more significantly, there is also a very strong propensity for economic activities to form localized geographical clusters or agglomerations (Dicken 1998). In fact, the geographical concentration of economic activities, at a local or sub national scale is the norm not the exception.

As mentioned earlier in 4.4, a port cluster was defined as a “set of interdependent firms engaged in port related activities, located within the same port region and possibly with similar strategies leading to competitive advantage and characterized by a joint competitive position vis-à-vis the environment external to the cluster” (Hazendonck 2001:136), and has the following four main characteristics (de Langen 2004b:82):

- a) A cluster is a population of interdependent organizations. These organizations – predominately firms- operate in the same value chain and have to some extent a shared competitive position. For that reason, they are interdependent; when one firm attracts business, other firms benefit, and when a firm goes bankrupted, other firms lose a customer or supplier [...]
- b) Clusters are geographically concentrated. Different clusters have different relevant cluster regions and can occur at a variety of scales: local, regional or interregional [...]
- c) The cluster population consists of four kinds of organizations; business units, associations, public-private organizations, and public organizations. Business units may be organizational units of firms as a whole. For instance, business units of banks or insurance firms dealing with ships are included in a maritime cluster, not the bank or insurance firms as a whole [...]

- d) The cluster population is linked by a core specialization. This notion is implicit in most studies on clustering and is necessary since the ‘chain’ of input-output relations is in principle endless [...]

If we compare these four characteristics however with a modern seaport agglomeration like the Port of Vancouver, you will find that the seaport community corresponds to the cluster-definition to great extent; The Port of Vancouver consists of several independent enterprises (see list bullets below) that work together to build the necessary linkages to make a competitive, efficient port that serve the North American economy (W.Gill, Vice President at SFU):

- Chandlers and Suppliers
- International Maritime Centre
- Navigation and Pilotage
- Shipyards and Repair
- Arbitration
- B.C. Chamber of Shipping (located in Vancouver City Downtown)
- Bunkering/Lubricants
- Environmental Services
- Protection & Indemnity
- Ship Loading
- Stevedores
- Tank & Bilge Cleaning

For a comprehensive listing of marine services, please visit the Chamber of Shipping website²⁹. The next section, will shortly introduce you to some of the stakeholders³⁰ in the Port of Vancouver community.

6.5.1 Stakeholders

A port cluster as the Port of Vancouver may be a very complex entity, where a multitude of interacting and conflicting interests are involved (Hazendonck 2001, Goss 1990, Frankel 1989 and Heaver 1995). The concept of seaport cluster competition can therefore be analyzed from a large number of diverging perspectives. Indeed, multiple economic actors have an interest in the port sector and are involved in a variety of seaport activities.

29. <http://www.chamber-of-shipping.com/index/about>

30. A **stakeholder** is often defined as “people who are (or might be) affected by any action taken by an organization or group”. Stakeholders, then, are more coherently described as "interest groups" (Wikipedia).

As a result, a port strategy analysis like this could be conducted in function of multitude of different and sometimes conflicting goals, associated with the various actors in the port cluster.

In general terms, three categories of stakeholders –or otherwise interested- can be observed in the Port of Vancouver community (W.Gill; E. Tofsrud): *government agencies, the port authority and the port companies*. This last category is composed of two sub-categories. First, port operators directly engaged in logistics chain activities within the port, such as the loading and unloading of cargo, storage, distribution and related value added services (i.e. assembling, repacking and consolidating). Second, the actors engaged in those port related activities that would not conventionally be considered as part of the logistics chain in a strict sense, e.g. manufacturing firms³¹ located in the port area, and acting as points of origin or destination of goods loaded or unloaded in the port (E. Tofsrud). Figure 6.7 illustrates the relations between cargo handling, transport and logistics activities.

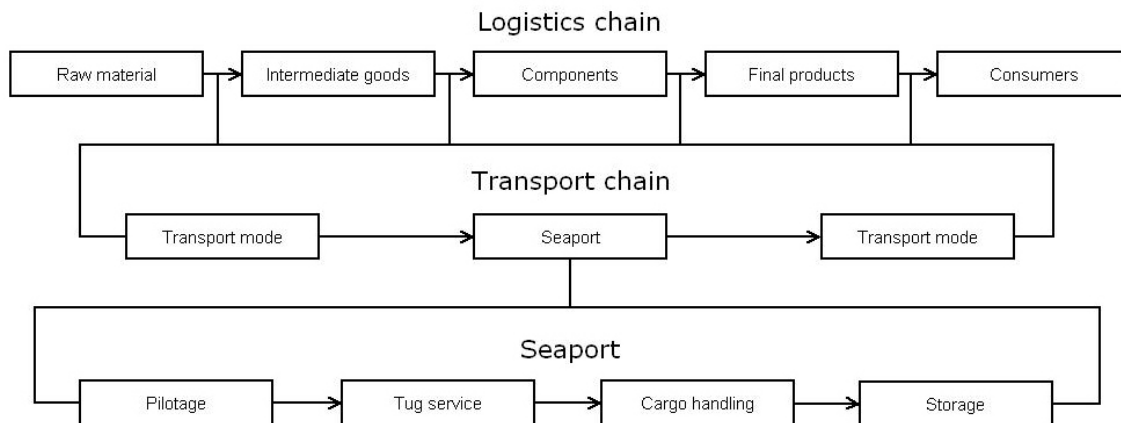


Figure 6.7: Relations between cargo handling, transport and logistics activities
Source: Langen, P.W. de (2004b).

Hence cargo handling, transport, logistics, and production functions (and sometimes certain trading activities) are strongly interrelated and comprise the ‘port cluster’ in

31. The Port of Vancouver is considered as an industrial zone due to its ability to handle and store raw materials such as lumber, coal (Westshore terminal), and sulphur (Pacific Coast Terminals). That is, when a cost minimization is crucial for competitive production, industrial activities locate in seaports and production activities are closely integrated with logistics and transport claims (de Langen 2004b).

Vancouver. Although trade is consistently the least linked part of the cluster, cargo handling, transport and logistics are all centrally related to the other cluster activities. Further detail on all these activities, indicating the types of firm they comprise, is provided in Table 6.2. The present study focuses primarily on port authorities and the port operators engaged in loading and discharging of cargo, because these actors are likely to benefit most from formal port strategy analysis and they are also the actors engaged most clearly and directly in intra-range competition among seaports. In this context it should be noted that port authorities are usually either the instigator, catalyst or, at minimum, the ‘impactees’ of government policy³².

Another group of stakeholders being observed during the fieldwork, not discussed above, and not the direct focus of this study, includes the *port customers*. The North American ports increasingly have to deal with a concentration of power when purchasing both terminal operators’ services and other port services (Notteboom & Winkelmanns 2001). Hence the behavior of global carriers and other major port clients should be seen as a key determinant of port competitiveness and as an important input for formal strategy analysis. However, this set of actors is viewed in the present study as external to the ‘port cluster’, except if it becomes involved in actual port operations, e.g. as a result of vertical integration.

Finally it should be mentioned that the regional effects of port clusters in terms of employment and value added creation, as well as the growing concerns about transport externalities inflicted by ports on their environment, has resulted in increased societal demands imposed on ports and therefore on port strategy analysis per se.

32. Activities and services performed by port authorities are e.g. planning, expanding, modernizing and maintaining a port’s infrastructure, operating its own equipment and warehouses.

Table 6.2: The principal economic activities comprising the Vancouver port cluster

<p>Cargo handling system</p>	<ul style="list-style-type: none"> • Stevedoring suppliers (i.e. Western Stevedoring, PCDC Canada Ltd.) • Rail terminals (i.e. Canadian Pacific Railways, Burlington Northern Santa Fe Railway) • Towage (i.e. Pacific Towing Services Ltd.) and pilotage • Storage of goods (i.e. Cratex Container Sales, Metropolitan Container Repair) • Port engineering (i.e. Grand Marine Ltd.)
<p>Transport System</p>	<ul style="list-style-type: none"> • Shipping companies (i.e. ATG, China Shipping, COSCO) • Transport companies (CN, CP, AG Transport Ltd., Quantum Harbour Services, Cansea Transport) • Ship supplier (i.e. Courtney Agencies Ltd., Anglo Canadian Shipping) • Ship agents (i.e. Gearbulk,, Hanjiin Shipping) • Forwarding agents (i.e. Overseas Container Forwarding, Schenker of Canada Ltd.) • Maritime services (i.e. OASIS Marine Services, Burrard Clean Operations, Ship-owners Assurance Management) • Ship build/repair (i.e. Allied Shipbuilders Ltd., All-Sea Enterprises Ltd., Meridian Marine Industries Inc.)
<p>Logistics System</p>	<ul style="list-style-type: none"> • Logistics service providers (i.e. Batchelor Marine Consulting Services Inc., Pacific Northwest Ship and Cargo Services Inc., Chamber of Shipping) • Warehouse facilities (i.e. Coastal Containers Ltd.) • Logistics consultancy and ICT (i.e. SeaTrade Enterprises Inc., Seaport Consultants Canada Inc.) • Value Added services (i.e. Marine Industrial Security Services, equipment/materials handling; finance and accounting companies located in Vancouver)
<p>Production System</p>	<ul style="list-style-type: none"> • Production activities related to commodities (i.e. Saskatchewan Wheat Pool, Sultran Limited) • Supplier services for production
<p>Trade System</p>	<ul style="list-style-type: none"> • Trading companies for commodities (Delta Trading Ltd., Byrne Road Wholesale Lumber, New Skeena Forest Products Inc., Shell Canada Products)

Source: The Author's own work

6.6 Conclusion

This chapter has attempted to provide the reader a short overview of the operations, trade, facilities and economic influence in the Port of Vancouver community before the main analysis is presented. It began with placing the Port of Vancouver geographically followed by a paragraph describing its role as a job generator before presenting Vancouver's maritime cargo industry. Finally a short recapitulation demonstrated that the Port of Vancouver *is* a seaport cluster and thereby concluded the chapter.

The next chapter will outline some of the local adjustments that the Port of Vancouver is making in the new age of containerization to remain competitive based on an in-depth investigation in 2005 in which the dialogue of ideas and evidence have been culminated in the representations of social life. Emphasis is put on their terminal upgrading and expansion plans, followed by an analysis in Chapter 7.

7. Preparing for the Future

Paradoxically, the enduring competitive advantages in a global economy lie increasingly in local things – knowledge, relationships, and motivation that distant rivals cannot match

Michael E. Porter (1998b)

7.1 Introduction

Competition has intensified dramatically over the last decades, in virtually all parts of the world. In past centuries ports were mainly used as instruments of state or colonial powers, and the ability to control port access was a means to controlling markets. There was hardly any competition between ports as they were regarded as “geographical monopolies”.

While we now associate the absence of competition with developing economies, it is very easy to forget how much change that has taken place in advanced nations. Ports are no longer merely geographically determined places for loading and unloading cargo. Far more, the modern port operation is the basis for the integrated and sophisticated logistical system that the maritime industry is part of (Inoue 2002). “[...] the port has in fact become an interface between intercontinental transport and a place in the hinterland being considered for production, assembly or final distribution” (Jackobsen et al 2004:68).

So how then, have this competition affected the Port of Vancouver and its strategies? Why are things as they are? This chapter will therefore look at the “local” adjustments the Vancouver Port is making to remain competitive as a seaport cluster on the West Coast in the new age of containerization. Emphasis is put on terminal upgrading and expansion plans.

7.2 B.C. Ports Strategy

The Port of Vancouver is at a crossroads. Before us lies tremendous potential to capture economic growth and prosperity as a result of increasing Asia-Pacific trade. China, in particular, is reshaping the world economy and the Port of Vancouver is uniquely positioned to harness opportunities as a result.

The Land Use Plan for the Port of Vancouver, 2005

Obviously, it is an exciting time at the Port of Vancouver and an exciting time for world trade (B. Corsan, C. Badger). According to Captain Gordon Houston, the Port is probably poised upon the greatest period of expansion in its history with a forecast of 300 per cent growth in container volumes over the next 15 years, while contributing an additional \$3.1 billion to Canada's GDP annually. However, there is a tremendous amount of work to be done to manage it effectively, both as a cluster manager³³ and as a cluster coordinator. But more importantly, there are competitors who would like nothing more than to take it away from them.

The good news, however, is that there is a plan for the Port of Vancouver and other gateway ports in British Columbia to capture the massive increase in international trade³⁴. In fact, the plan at the Port of Vancouver is part of a broader strategy plan that the Government of British Columbia has recently completed. It is called the "B.C. Ports Strategy"³⁵, and identifies not only the infrastructure development that must occur at Canada's Pacific ports to capture the Asia Pacific trade opportunities, but also the public policy and competitiveness issues the Port of Vancouver must address to optimize its predicted growth,

33. The role of the port authority is discussed frequently (see Goss 1990; Stevens 1999), but not from the perspective that a port is a cluster, where collective action problems have to be solved. Of this reason, I claim that the 'institutional position' of the port authority can be described with the term 'cluster manager'.

34. Vancouver Board of Trade Luncheon Conference, Nov. 24th, 2005.

35. **B.C. Port System:** The B.C. port system is a multimodal transportation network that includes six Canada Port Authority (CPA) ports that are part of the National Ports System and many other public/private harbors under local administration, Port terminals, Transcontinental railways in Canada and the U.S. (e.g. CN, CPR, Burlington Northern Santa Fe), National highway system and other regional and local roads.

A working partnership between our ports and the federal and provincial governments will ensure that the British Columbia port system can respond to the opportunities created by unprecedented growth in containerized traffic to and from China and other Asia-Pacific countries, and expected growth in cruise and bulk traffic through our ports (B.C. Ports Strategy 2005:1).

To give this port development a rolling start, the British Columbia Government has already taken action by providing:

- \$2.5 million property tax relief for port terminal operators to stimulate new investment;
- \$400 million investment in road infrastructure in the Lower Mainland which will benefit port traffic;
- significant investment for strategic port development including \$17 million to create new container handling capacity at the Port of Prince Rupert;
- \$2.5 million support for the development of British Columbia as a cruise destination.

These investments confirm that the development of the international trade hub on the North American west coast is of a noteworthy priority of the Government of British Columbia (B.C. Ports Strategy 2005). That is, in addition to pursue policies to benefit and stabilize the economies as a whole, they are now attempting to create an environment in which Canadian West Coast ports can upgrade competitive advantages in established industries by introducing more sophisticated technologies and methods and penetrating more advanced segments. The Government of British Columbia has as a matter of fact become a catalyst and a challenger to encourage –or even push- Canadian ports to raise their aspirations and in so doing move them to higher levels of competitive performance rather than a passive participant of international competition.

“I can’t tell you how significant this attention is. It is unprecedented and shows recognition of the West is important. In fact, there are many who believe that the economic power in this country is shifting west, that our national leaders no longer see the country’s economic power base in the manufacturing industries of eastern Canada, but in the resource and trading economies of western Canada. I can’t tell you if this is the

case. But I can tell you that we have greater federal support for the expansion of our gateway than ever before. And that is a very good thing - for Canada, for B.C. and for all of us here who work at the Port of Vancouver” (Captain Gordon Houston at the Annual Workshop on Railway Issues 2005).

However, while their role in creating and sustaining regional advantage is significant, the Government can only play a role that is inherently partial, and that only succeeds when working in tandem with favorable underlying conditions in the “Porterian diamond” in accordance with Michael Porter’s cluster theory. To put it differently, if the Port of Vancouver wants the economy to grow... if they want to take advantage of trade opportunities with China... and if they want to exploit their position as “a natural gateway” between North America and Asia (Tofsrud, Corsan), the Port of Vancouver and its stakeholders have to move quickly, decisively and strategically together as one team to achieve productivity growth (as illustrated in Figure 7.1 below).

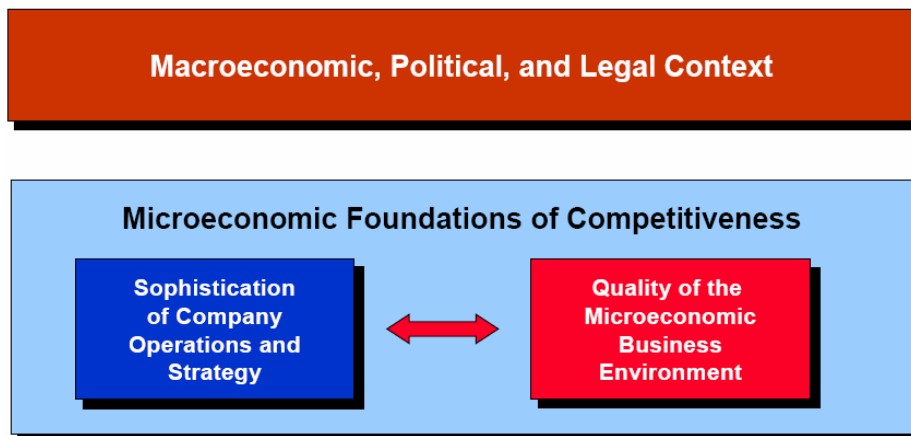


Figure 7.1: Determinants of productivity and productivity growth in the Port of Vancouver
 Source: Based on M. Porter (1998a)

The first goal is thus to make sure they have enough terminal capacity to meet future demand by 2020 and thereby enable the Port to maintain its strong, competitive position as a North American gateway for container trade. That is, virtually any competitive advantage can be replicated sooner or later if the Port of Vancouver rests on its laurels (Chris Badger), - including container terminal facilities. Therefore, in order to keep pace

with the expanding world economies, the opening markets in Asia and the increasing capacity needs of its customers, the Port of Vancouver has to become a moving target and create new advantages at least as fast as competitors can replicate old ones. But more important, their terminal facilities must continuously be improved and upgraded.

VPA's overall expansion strategy consists therefore of a three-pronged approach to increase B.C.'s competitiveness as a trading partner in the Pacific Northwest container market;

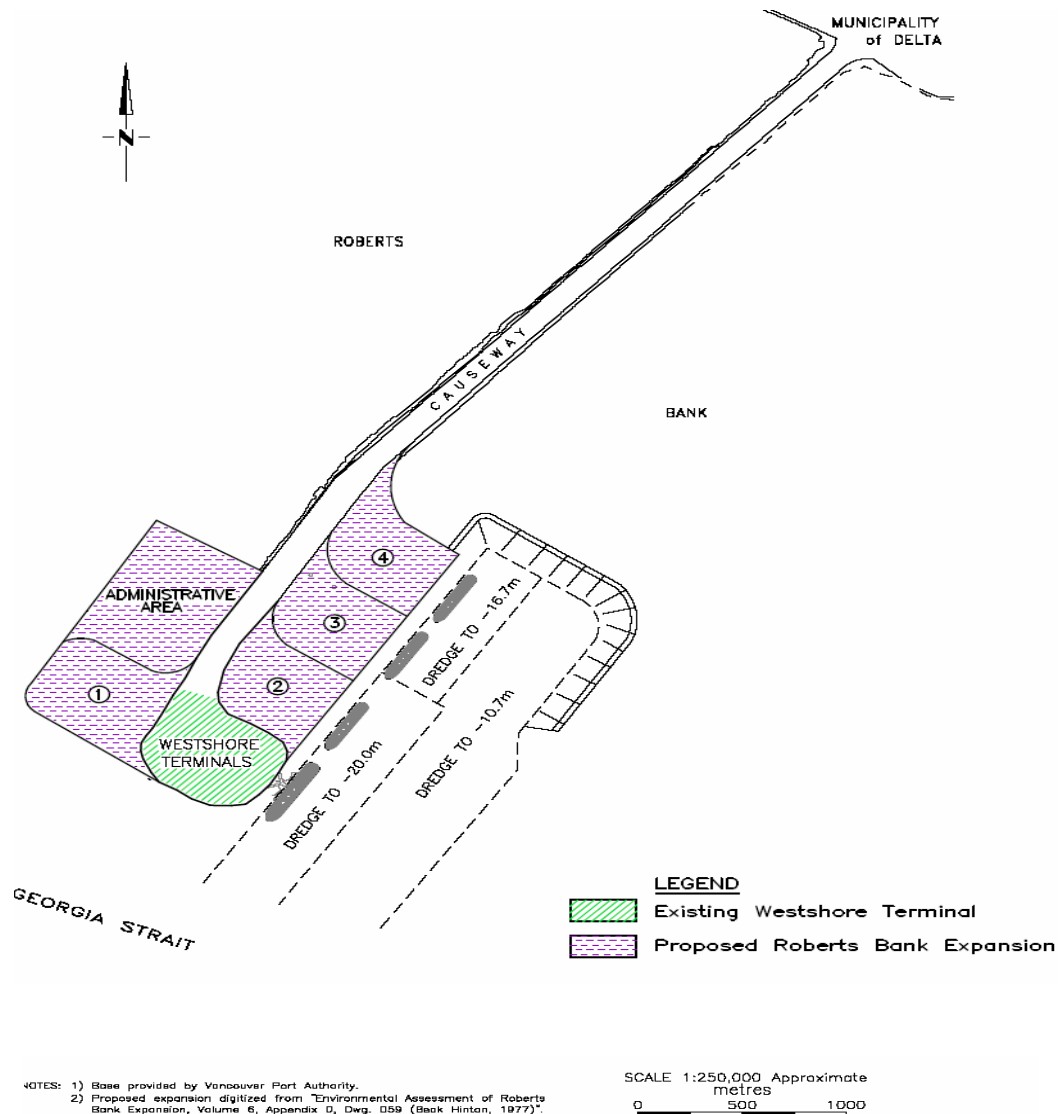
- i) Increasing production at existing terminals
- ii) Expanding existing facilities
- iii) Exploring options for new facilities

Two of the biggest expansion projects takes place at Roberts Bank in Delta, - 35 kilometres south of Vancouver's inner harbour - (B. Corsan) to facilitate the forecasted traffic growth. The plan, in its simplicity, is to construct an additional berth and storage yard at the existing two-berth container terminal to expand its container handling facilities from 900,000 TEUs a year to an anticipated capacity of 1,300,000 TEUs by 2008 (see Figure 7.2). The proposed third berth, more known as the "Deltaport Third Berth Project" (the Project), will therefore provide the VPA, and the existing terminal operator, TSI, with the increased container capacity that is required to address the increasing container trade demand within North America. The second proposed development project at Roberts Bank involves the development of a new three-berth container terminal known as "Terminal 2" which will add about two million TEUs of container capacity to the Port of Vancouver by 2020³⁶.

Collectively, these suggested projects will increase the Port of Vancouver's terminal capacity by 3.6 million TEUs to a total of 5.3 million TEUs by 2020. That is, not only are all five suggested projects required to serve forecasted growth but also to enhance the competitiveness of British Columbia. Furthermore, the upgrading process will provide

36. http://www.portvancouver.com/container_expansion/deltaport/index.html

significant socio-economic benefits to the region's workers, businesses and local communities (B. Corsan).



NOTES: 1) Base provided by Vancouver Port Authority.
 2) Proposed expansion digitized from "Environmental Assessment of Roberts Bank Expansion, Volume 6, Appendix D, Dwg. 059 (Bark Hinton, 1977)".

SCALE 1:250,000 Approximate metres
 0 500 1000


 HEMMERA	HISTORY OF DEVELOPMENT AT ROBERTS BANK		
	1977 PROPOSED ROBERTS BANK ORIGINAL EXPANSION		
CLIENT: VANCOUVER PORT AUTHORITY	PROJECT No. 499-002.01	December 2004	FIGURE 2

Figure 7.2: Roberts Bank Development Plan
 Source: The Port of Vancouver

However, even though the Port of Vancouver is working to advance all five of the expansion projects, the future is definitively not as water tight as they may sound, which Chapter 8 will demonstrate. (B. Corsan, S. Brown, R. Sol).

7.3 Conclusion

Economic geography in an era of global competition, then, involves a paradox. In an economy with rapid transportation and communication and accessible global markets, location remains fundamental to competition, - albeit in different ways at the turn of the twenty first century than in earlier decades.

This chapter has shown that the Government of British Columbia together with the Vancouver Port Authorities has attempted to develop a strategy to capture economic growth and prosperity as a result of increasing Asia-Pacific trade. Government's most basic role in this process is to establish the overall microeconomic rules and incentives governing competition that will encourage to growth, while the Port of Vancouver will attempt to sustain a competitive advantage through improved terminal facilities and expansion plans.

8. Just a Pawn in the Game of Commerce?

Here's a sobering thought. For all of the noise we make about the huge impact that China is having on our economy, we're actually number 17 on their list of trading partners. We account for only about 1% of their exports, and about 60% year-over-year growth in international trade volumes. So imagine the impact of doubling or tripling our trade with the world's fastest growing economy. Imagine what it would mean for our ports, our railways, our roads and distribution centers with today's infrastructure and today's legislation. We're already struggling to keep up with our 1 per cent share of China's export trade. Something must be done if we still want to be in the transpacific game.

Captain Gordon Houston,
Vancouver Board of Trade, 2005

8.1 Introduction

The container brought about two major changes in international trade flows (Levinson 2006). First, says Levinson, it facilitated the physical movement of freight across many transport modes. Developed initially as a means of speeding up dockside cargo transfers onto ships and reducing the amount of time vessels spend in port, the container is now a feature of all major transport modes, except for pipelines. Maritime transport is still at the heart of container movements, but whereas the port used to be the major point of interruption (and frequently the major bottleneck) in long-distance cargo flows, today it is but one of many links in an inter-modal transportations chain (Vancouver Maritime Museum, Jackobsen 2003).

The second major development says Levinson, has been in the organization of trade. A growing proportion of containerized trade is being handled on a door-to-door basis, from point of production to the point of consumption (Jackobsen 2003, Levison 2006). The physical ease with which the container can be transferred from one mode to another is being matched by the emergence of large enterprises that offer a complete service from

the point of origin to the final destination, - a trend which implies that the Port of Vancouver no longer can expect to attract shipping lines because they are a so-called “natural gateway” to rich hinterlands. The result then is that the Port is becoming marginal in the routing of container flows despite its enormous terminal investments. The shipping lines have become the major actors in world trade in non-bulk commodities and because they operate on a global scale they possess a more varied choice of ports of call than ever before. That is, they decide on landward routing in conjunction with their service networks in maritime space. The consequence is that hinterland and foreland (the overseas destinations) have come together in an unprecedented fashion; “A new geography of container flows has been fashioned” to cite Hayuth (1985). And nowhere is this better exemplified than in North-America and Canada, where micro-bridge rail services permit the carriers to concentrate cargoes at load center ports on the particular maritime range that best serves the global interests of the company or consortium. The question then, what is the consequence of this global development, and how does it affect the federal Port of Vancouver?

So far, this analysis has been examining the Port of Vancouver’s terminal upgrading. This chapter, however, examines the plight of public monopoly ports and will therefore take a closer look at the collective action to facilitate the predicted transpacific container growth, or in this case the lack of collective action (?), between the private and public actors at the Port of Vancouver, and how the growing transpacific trade affects its transport infrastructure.

8.2 The Effect

Publicly-owned ports have become a very large share of the costs of containerization trend. Certainly, shipping lines (such as Hanjin and Hapag Lloyd) have made considerable investments in new vessels and boxes themselves, but the enormous factor costs incurred in improving and upgrading port facilities, i.e. developing new terminal sites, dredging approach channels, purchasing gantry cranes and yard handling equipment, are provided at public expense by the local port corporation in Vancouver

(anonymous referee). Some costs, however, have been borne or shared by its terminal operators and the lines themselves (G. Baxter, B. Pottinger). Among them, P&O Ports Terminals³⁷, - one of the leader firms in the Vancouver port community (B. Corsan) that to a great extent show ability and incentives to make investments with positive effects for other firms in the seaport cluster, (in addition to the Vancouver Port Authority) - that recently has invested as much as \$155 million dollars in infrastructure, equipment and operating systems to improve its capacity, efficiency and customer service. “Both terminal operators [P&O Ports and Terminal Systems] have been able to achieve the highest throughput in Western North America based on terminal footprint” (B. Corsan). Their new facilities, including five gantry cranes, six deep-sea berths, 16 one over five RTG’s, an automated truck gate and a sophisticated operating system that tracks cargo in real time (NAVIS)³⁸, makes Centerm one of the most sophisticated container terminals on the West coast, and in this way demonstrates that a ‘true’ leader firm *can* add to the quality of governance in the Vancouver seaport cluster in accordance with de Langen’s theories on cluster governance. Figure 8.1 below shows this mechanism schematically (Wijnolst, N. 2003).

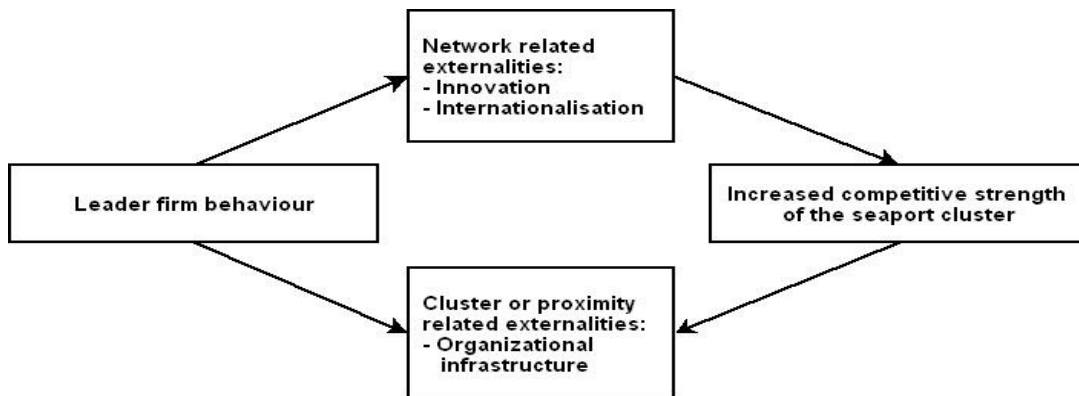


Figure 8.1: Leader firm behavior impact on the competitiveness of a seaport cluster

37. P&O Ports Canada Inc., a DP World company is the container terminal operator and stevedore of choice for many of the world’s shipping lines and marine consortia.

38. Source:

http://portal.pohub.com/portal/page?_pageid=347,1,347_111366:347_111424&_dad=pogprtl&_schema=P OGPRTL

But despite the magnitude of the costs involved to improve the Port of Vancouver's performance against its existing advantages³⁹, no major port has been able to resist the challenge of containerization. Nor has the Port of Vancouver (Armitage 2001; Vancouver Maritime Museum, B. Gee). The container berth has therefore come to represent the hallmark of responsibility in port business. For workers, of course, this has all been a mixed blessing. That is, as consumers, they enjoy infinitely more choices thanks to the global trade the container has stimulated. As wage earners, on the other hand, workers have every reason to be ambivalent.

The problem, however, is that West Coast ports as Vancouver can no longer be sure that there will be any benefits from capital investments made in container facilities as inter-port competition has increased greatly and the monopoly position that the port authority was set up to administer in the public good has started to crumble dramatically (because traffic of traditional hinterland regions no longer can be guaranteed due to the continental port competition) (W. Gill, E. Tofsrud). The result, then, is that the Port of Vancouver has to make significant investments without any degree of assurance that traffic will increase. The only guarantee they have is that unless there is a competitive container handling facility available there will be little or no container traffic from the Pacific Rim. But does that mean that they should stop investing in terminal facilities? That is, - is the Port of Vancouver really willing to face the next generation of Canadians in 10 or 15 years and say they had the greatest economic development in a century but did not take advantage of it because they failed to think big (C. Badger, B. Wilds, R. Sol)? Shouldn't they be striving to grow? Shouldn't they be striving to increase their market share? Shouldn't they be striving to enhance their position as one of the world's great trading economies? Captain Gordon Houston puts it in this way;⁴⁰

There are few jurisdictions in the world better positioned than we are. But we have to be bullish to achieve a dominant share in today's rapidly growing marketplace. And we have

39. The VPA's container expansion strategy represents one of the largest capital projects contemplated in B.C. in several years, and likely require investment of some \$ 1.5 billion by the VPA and its strategic partners.

40. Captain Gordon Houston at the Vancouver Board of Trade, 2005. The speech is also available on the web: http://www.boardoftrade.com/vbot_speech.asp?pageID=174&speechID=848&offset=&speechfind=

to take advantage of the factors working in our favour. The fact is the Port of Vancouver is *the most* competitive gateway between the producer economies of Asia and the consumer economies of North America. We are the closest major deep-water port to Asia. We have competitive labour costs, excellent rail links to key Canadian and U.S. markets, a better balance between inbound and outbound cargo than any of our competitors, and a reputation for customer service.

“[...] we’re leaving none of this to chance. We’re dedicating our resources and our energies to making sure it happens” (C. Badger). But equally important, they have to start acting as a team and increase the quality of the seaport cluster (E. Knoph), - quality so defined as that a higher quality leads to a better performance- , if they still want to be part of the transportation game. Badger continues,

But if the Port of Vancouver is going to compete and win as a gateway, as a province and as a country, we must believe in ourselves, and aggressively pursue trading relationships that position Vancouver and B.C. as the natural bridge between North America and Asia. We can credible get there, but we have to think “big”

This is a very important message for their overseas trading partners to hear; - i) that Canada’s government leaders are fully committed to do what is required in expanding trade with Asia (as illustrated in Chapter 7), and ii) that the Port of Vancouver is doing their best in order to accommodate the predicted container growth.

I know it’s a message that Chinese President Hu Jintao heard loud and clear when he visited Vancouver this September [2005]. During his time in Canada, President Hu said this: “The Canadian government [has] introduced the important strategy of building a Pacific Gateway, mapping out the plan for developing a trade, investment and transportation hub oriented toward the Pacific Rim region.” I appreciate this vision, which I believe will give greater impetus to the economic and technological cooperation between Canada and the Asia-Pacific.”

Obviously, President Hu's words are encouraging; in fact, his very presence in Vancouver should send a powerful signal to all of them about China's interest in doing business with Canada.

Yet (notwithstanding their tremendous potential to capture economic growth), the whole situation is [...] "somewhat analogous to a lottery where only those who purchase tickets have a chance of winning, however small those odds may be" (Brian Slack 1993:582). That is, despite the enormous costs the Port of Vancouver have been invested in the terminal upgrading process to sustain competitive and their many attempts to act collectively to facilitate the predicted traffic growth, VPA finds themselves less and less in control of their destinies (anonymous) due to consortium and partnership agreements among its private-owned port clients (E. Tofsrud, E. Knoph). That is, although Sea Land's predecessor, Pan Atlantic Steamship was a one owner operator, and such companies as Evergreen and Maersk were begun as family concerns, the majority of the container shipping companies today started as consortium of liner companies in the 1960s or 1970s writes McCalla (1999). The rationale for the "new" alliances is the same as in the formation of consortia in the beginning of containerization; - they all share the risk of investment in capital equipment. What marks the cooperation in evidence today among the container shipping companies, however, compared to the 1960s, is the scale, geographical and otherwise, at which it operates. Where originally cooperative ventures operated on individual trade routes, today they operate at the world scale. An estimate by the Containerization International Yearbook suggests that the companies in the major alliances control nearly 1/3 of the world's shipboard TEU capacity. The concentration of assets is especially noticeable on the three major East/West container routes (Europe Far East; Europe North America and Far East North America) where it is estimated that companies involved in four alliances control as much as 50 per cent of the capacity⁴¹. But at what price?

Ports of call, including that of the Port of Vancouver, are continuously threatened and traditional service networks are continually changed as alliance members consolidate

41. Robert J. McCalla in *Journal of Transport Geography* 7 (1999) 247-254

their cargo in a limited number of ports. *Yet* (as Slack 1993 also indicates) the shipping lines demand even larger container terminals, with ever deeper channels, equipped with even more expensive and sophisticated handling gear at a time when the economic benefits accruing from such investments are declining, and clients of long standing are demonstrating little loyalty in maintaining their business activities in the port (anonymous referee). The Port of Vancouver has in fact become what Brian Slack calls a “pawn” in a global game of commerce were private owned shipping lines constantly can ‘free-ride’ on the cooperative efforts of others.

This situation is probably amongst the most vexing problems for the Canadian local port authorities today and especially for publicly-owned ones as the Port of Vancouver since its local cluster adjustments (as illustrated in Chapter 7) is highly necessary to remain competitive today (B. Corsan). But as a private-public organization the Port of Vancouver has (not surprisingly perhaps?) relatively high set up costs and uncertain pay-offs, and as a consequence is vastly depended on substantial support from the government to ensure that customers in the hinterlands (tributary areas) are not abused by a private monopoly but rather being operated in the public interest⁴². So how then can the Port of Vancouver possibly justify the growing demands for capital investments by the government that may lead to both i) a reduction in port-induced employment and ii) which not be justified by any guarantee of stable port clients (or traffic growth)?⁴³ It is not shock, therefore, that many port bodies in the twenty-first century (see Slack 1993) including the Port Vancouver have chosen to use a so-called “Economic Impact Analysis” to measure the wider economic benefits ascribed to its port activity in an attempt to impress higher authorities and the public to obtain additional funding or to encourage other stakeholders to invest in the “marine community” in order to sustain its competitive position. In the ‘Economic Impact Update’ prepared by InterVISTAS

42. Under federal legislation, the authorities that run Canada’s major ports enjoy significant autonomy in day-to-day operations but their access to capital - including their ability to borrow - is tightly restricted

43. in VPA annual report 2004

Consulting for the Port of Vancouver in 2005, they provided the reader (i.e. the higher authorities) measures of economic impact including⁴⁴:

- Employment and wages generated by the Port of Vancouver and Port related businesses;
- GDP and Economic Output contribution of the Port of Vancouver to the British Columbian and Canadian economy;
- Taxes and fees paid to the federal, provincial and municipal governments.

The results have been noteworthy⁴⁵. In October, Federal Transportation Minister Jean Lapierre announced a \$590 million investment in the Pacific Gateway program⁴⁶ after several meetings with the Port of Vancouver among others (The National Post). He went so far as to call it a “down payment” on the federal government’s commitment to transportation infrastructure and other requirements necessary to achieve Canada’s Asia-Pacific trade goals. Furthermore, as can be seen from the Figure 8.2 below, Transport Canada announced to raise the port’s borrowing limit to \$510-million from \$225-million in February 2005 which is seen as a crucial move to the port’s recently announced plan for a \$1.4-billion upgrade to its container terminal facilities.

44. For further information, please visit:

http://www.portvancouver.com/the_port/docs/Economic_Impact_Study.pdf

45. Canadian Transportation Agency and the Railway Association of Canada. (2005). Canada’s Railways: Emerging Issues; Clear Options, 9th CTA/RAC Annual Workshop on Railway Issues. Montreal. April 14th, 2005

46. Pacific Gateway Program is a program designed to enhance prosperity and strengthen Canada’s position in international commerce by further developing the Pacific Gateway.

NATIONAL POST

Port applauds increase in borrowing limit: Port of Vancouver

National Post

Wed 09 Feb 2005

Page: FP5

Section: Financial Post

Byline: John Greenwood

Source: Financial Post

VANCOUVER - The head of the Port of Vancouver is hailing a move by Ottawa to more than double the port's capacity to borrow money on the public markets.

"This ensures that Vancouver will access the capital necessary to invest and expand terminal infrastructure to meet the growing needs of Canadian industry," said Gordon Houston, chief executive of Canada's biggest port.

This month Transport Canada announced plans to raise the port's borrowing limit to \$510-million from \$225-million.

Figure 8.2: Increase in borrowing limit.

Besides, it allows the port to raise financing without having to get federal approval for every dime, according to the B.C. Business Council, a leading business lobby group⁴⁷. But although the role of federal government in creating and sustaining advantage is significant for the seaport cluster as a whole, it is seen as inevitably partial for the Port's future success. That is, the government *does* affect local advantage by shaping or influencing the context and institutional structure surrounding the Port of Vancouver (i.e. increasing the borrowing limit) but (un)fortunately firms compete in industries, not nations. The only way firms, or in this case the Port, can gain a competitive advantage is through improvement, innovation and upgrading done by the Port itself, - often described as the never-ending process. This involves not only the progress in executing existing advantages but also widening and upgrading the bases of competitive advantage over time. The next section will therefore take a closer look at how the Port of Vancouver attempts to create a competitive advantage.

47. National Post, Feb 9th, 2005

8.3 The Option: From Internal to External Sources of Success

The competitive position of a seaport is in fact a matter of commercial attitude, mentality, entrepreneurial culture and the ability to build competitive advantages through the development of core competencies

Chris Badger, Vice President, the Port of Vancouver

In recent decades, thinking about the influence of location on competition has taken a relatively simple view of how companies compete. Competition has been seen as largely static and as resting on cost minimization in relatively closed economies in which a competitive advantage in factors of production is decisive, or, in the most recent analysis, economies of scale. This picture, however, fails to represent real competition; Competition is highly dynamic and rests on innovation and the search for strategic differences as this section attempts to demonstrate.

Since it has become well known that the maritime container battle will be won on land, seaports that will succeed in the 21st century ought to be both ‘customer led’ and offer ‘best-in-class’ performance. To put it differently, a seaport cluster as Vancouver can only outperform its rivals if it can establish a difference that it can preserve or by developing better services. The Port of Vancouver has therefore chosen to rest on two key strategies in obtaining a competitive advantage (or in this case, by improving the Port’s existing advantages);

- (i) flexibility to adapt quickly to changing opportunities, and
- (ii) An integral approach to logistics issues in transport chains (since the Port of Vancouver increasingly have to deal with large port clients who possess a strong bargaining power *vis-a-vis* terminal operations and inland transport operations).

I will now discuss these two strategies. First out is the ability to change.

8.3.1 The Ability to Change

[...] as a transportation industry, we must respond to the growth opportunities and competitive pressures we're seeing in the marketplace today. If we don't, we will not only lose the opportunities associated with expanding Canada's international trade and domestic transportation sector. We run the risk of losing the market share we've worked so long and hard to develop to our competitors in the United States

D. Bickel,
Vancouver Board of Trade, 2005.

The first element that was mentioned above is probably the most critical but also the most necessary underlying success factor in obtaining a competitive advantage: the ability to change (B. Wilds, C. Badger, B. Corsan). To some extent, this evolution is a function of macroeconomic turbulence, but above all, it increasingly has to do with the speed of evolution in the port's sophisticated and demanding users. Proximity, both physical and cultural, to these clients, creates an enormous pressure to local businesses (including the Port itself) to meet high, and often new, standards in terms of product quality, features and service. Sustaining advantage requires therefore an ability to change. Continuously change states D. Bickel. It demands that a seaport cluster exploits, rather than ignores, new trends. It requires the port to even destroy old advantages to create new, higher-order ones. And it demands that Vancouver invests to close off the avenues along which competitors could attack. Korean shipbuilding firms did not become international leaders until they aggressively expanded the scale of their shipyards, moved to adopt new building techniques that substantially boosted productivity by reducing labour content, and developed the technical capabilities to build more sophisticated vessels. All these steps reduced the importance of labour costs at a time when Korean firms still enjoyed a labour cost advantage. To put it differently, if the Port of Vancouver fails to take this painful and seemingly paradoxical counterintuitive step, other competitors will do it for them -sooner or later. This is precisely why the Port attempts to become what Michael Porter calls a "moving target" on the West Coast and why they spend a lot of time and

energy in preparing the future as virtually any advantage can be replicated sooner or later if they rest on its laurels.

At the same time however, the ability to change strategy is a costly affair (R. Sol, W. Gill). For that reason, those managing to overcome inertia and the barriers to change and upgrade advantage are most often those that have been stimulated by competitive pressure, buyer demands or technical threats. "Few companies make significant improvements and strategy changes voluntary" (Porter 1998a:52). For the Port of Vancouver, however, it is seen as a highly necessary process, as mentioned earlier, since they do not have enough terminal capacity in the first place to facilitate the forecasted tripling of container volumes. The cluster upgrade is in other words a "*must*" for the port community if they the want the economy to grow and if they want to take advantage of the trade opportunities with China. And especially, if they want to compete against other West Coast ports such as the Ports of Seattle and Tacoma (E. Tofsrud, W. Gill).

But the ability to change-strategy also implies that the Port of Vancouver must undertake searching and realistic appraisals of how they can improve other parts of their business environment, such as the road and railway system, that often represent the binding constraints to competitiveness in seaports (Vancouver Board of Trade 2005, R. Sol). Houston puts it like this at the Vancouver Board of Trade Conference;

"There is just no sense building new container terminals if we don't have the road and rail links to move Canadian exports to our gateway, or import cargo quickly and efficiently inland to its final destination!"

Hinterland access is therefore crucial for the attractiveness of seaports (see Kreukels and Wever 1998) but compared to the U.S. (see Table 8.1) the Port of Vancouver has some significant work to do in this area according to Erik Knoph and Steven Brown. The Port of Vancouver's future success will for that reason depend on encouraging the private sector to invest in factor conditions to stay competitive (B.C. Ports Strategy 2005). Not only does the Port of Vancouver have a great deal to gain if the transportation industries

can respond to the huge increase in Asia-Pacific trade forecast over the next decade and thereby increase the quality of the hinterland regime. They also have a great deal to lose

Table 8.1: Canada-U.S. Port Comparison

U.S. Port System	Canada/the Port of Vancouver Port System
Ports are local government agencies and viewed as a requirement for industrial support	-no explicit recognition of the importance of marine transport to the economy in the National Marine Policy
- ready to access to local government funding	- different property tax regimes
- raise taxes for port development	- pay stipends to federal government
- direct federal investment	- no federal investment
- tax- exempt municipal bond financing	- taxable market debt financing
- federal government investing in port security	- limited federal investment in port security

Source: Ministry of Small Business and Economic Development and Ministry of Transportation. (2005)

if their “community members”, as Bennet calls it, cannot respond effectively in creating physical infrastructure, and particularly the port’s reputation (S. Brown , E. Knoph). More important perhaps, the quality of coordination in the cluster will decrease (and thus collective action will not arise);

I believe that all of the players in Canada’s transportation network have a vital role to play to prepare our nation to compete on the international stage in the years ahead. It’s not just ports and railways. It’s our trucking companies and distribution partners. It’s our customers here in Canada and overseas. And it’s the communities that host Canada’s international ports (Captain Gordon Houston at the CTA/RAC Annual Workshop 2005).

This is why the Port of Vancouver and the Greater Vancouver Gateway Council⁴⁸ have put such a pressure on the private railway companies (i.e. CN and CP) since they are considered as an essential component of the transportation system, but also because they are vital to the success of port operations in the Greater Vancouver area (C. Badger, E. Knoph, B. Wilds). Equally important is that the fate of the economy of B.C. will be increasingly tied to the costs and efficiency of Greater Vancouver’s transportation facilities since Vancouver’s role as an international gateway for Canada will continue to

48. The Gateway Council is comprised of senior executives from industry and government who subscribe to a common vision that Greater Vancouver become the Gateway of Choice for North America.

grow in the coming future. Finally, the railways companies are one of few members, which are able to make investments that can contribute with positive externalities for other members in the cluster - due to their size, market position, knowledge and entrepreneurial skills - and in this way being able to stimulate the competitiveness of the whole network. But even though cooperation to achieve common goals and economic growth would be beneficial for all community-members involved and a large part of the benefits of a more competitive network/cluster can end up in the railway companies' own pockets, as de Langen and Nijdam (2003) would put it, cooperation has not developed as they can 'free-ride' on the cooperative efforts of others, or simply because the railway companies are risk-averse when confronted with uncertainty and enormous capital investments. Various solitudes and divergent priorities characterize therefore the present situation, as summarized below:

The Port Authorities are naturally dependent on concerted actions and are already aligned with objectives for growth in the system. As landlords, they have much to gain from overall rail efficiency and effectiveness by being in a stronger position to attract shipping lines. *The shipping lines*, on the other hand, are naturally indifferent to Vancouver Gateway issues. They are the customers for this market and will be attracted by reliable service and low costs. Their ships, like water on which they float, will follow the path of least resistance. *The terminal operators*, however, are primarily focused on their own local concerns despite multi-national ownership, striving for market share within the port in which complexity is introduced in terms of coordinated arrangements that would require sharing benefits with a competitor. *The railways*; CN, CPR and BNSF (the class 1 Railways) are competitors on the North American scale and highly driven by market share. BC Rail Port Subdivision and SRYBC have minor positions in the global market, but they do have much to gain by being focused on market size. VIA, AMTRAK, West Coast Express and Rocky Mountaineer Rail tours have local focus and are indifferent to market share issues for freight as long as their plans can be accommodated. Railway motivations are therefore very complex because their main assets they have are people, infrastructure, motive power and rolling stock and work together by necessity rather than by choice. Finally, the *City of Vancouver*. Vancouver is a special case due to its historic

role of the Waterfront and False Creek Flats. Local land use, public response to trains, and traffic issues dominate their interest; and, there is continuing pressure to free up existing railway lands for urban development. Table 8.2 below shows the various initiatives/investments to improve the hinterland access regime in the Port of Vancouver.

Table 8.2: Initiatives/investments to improve the hinterland access regime in the Port of Vancouver

Mode of coordination	Relevant initiatives/investments
Hierarchies	No single firm has made major investments that have improved the hinterland accessibility.
Interfirm alliances	The number of strategic alliances to improve the hinterland accessibility is very limited.
Associations	Canadian Association of Importers and Exporters, B.C. Trucking Association, the Railway Association of Canada B.C., Chamber of Shipping, and Chamber of Commerce, promote the interests of their members. They are not actively lobbying for more infrastructures or a better interface with the terminals.
Public-private partnerships	The Port of Vancouver is probably the most influential actor among the private-public partnerships and has recently attempted to create an alliance together with the private railway companies such as CN and CP in order to improve the B.C. hinterland accessibility. The terminal operators, however, are primarily focused on their own local concerns despite multi-national ownership but ain't pushing the railway companies to do something about the current situation.
Public organizations	Greater Vancouver Gateway Council, Pacific Gateway Transport Canada, WESTAC, and the B.C. Business Council (the lobbyist among these three) are among the most important public organizations in the hinterland access regime.
Private organizations	Railway companies such as CN and CPR has recently invested a small amount of money in their system and rolling stock. But this is not enough.

Source: The Author

The second strategy that was mentioned in the beginning - which is probably the most complex one - will be discussed in the next paragraph.

8.3.2 An Integral Approach to logistics issues in transportation chains

Together as a transportation chain, we need to determine whether a different model is required.

Capt. Norman Stark
TSI Terminal Systems Inc.

Although it is often asserted that at present no true global logistics service provider exists, one cannot deny that the top forwarding and transport groups have networks of offices and freight handling facilities that stretch around the world. Major container port clients such as Hanjin Shipping are looking for end-to-end solutions and thus consider the Port of Vancouver merely as a sub-system in their own logistics chain. As can be seen in the quotation below, they [Hanjin], among others, concentrate their service packages not on the port's sea-to-land interface itself but rather on the quality and reliability of the *entire* transport chain. That is, they want to know their cargo is moving quickly, efficiently and reliably from origin to destination. And they want to know that every step in the chain — from shipping lines to terminal operations to railways and trucks — is integrated and optimized. Port clients as such hold therefore a post which increases both the pressure on associations and other public-private organizations to be effective;

In addition to providing a first class domestic transportation network throughout North America, Hanjin Logistics will become the premier global provider of supply chain management solutions. Our ability to integrate supply chain management with transportation and information technology management allows us to provide our customers with custom designed logistics packages that address the customers' requirements. Our vendor neutral positioning allows us to provide a collaborative approach to supply chain management designed to drive cost out of the bottom-line, while enhancing profitability and customer service

(www.hanjin.com/en/logistics/hjslogistics.jsp)

But the fact, however, is that Port of Vancouver, - the main gateway for Asian trade -, is already struggling to cope with surging volumes of freight generated by the economic boom in China which, not surprisingly, cause concerns about the future reliability and the

quality of organizational infrastructure (National Post, 25 Feb, 2005). During the port backlog in 2005 for instance (see Figure 8.3), the largest container terminal operator at the congested Port of Vancouver, TSI, had to take the unprecedented step of telling shipping lines to give it a break by unloading 25 per cent less cargo. (Ruth Sol, WESTAC⁴⁹). “This is the first time we’ve ever done something like this,” explains Norman Stark, chief executive of TSI, which operates two of the three container terminals at Canada’s busiest port. According to Mr. Stark the problem was that CN was not delivering sufficient rail cars to take them away. But Mark Hallman, a spokesman for CN, denied the railway is at fault. “The fact of the matter is TSI has problems,” Mr. Hallman said. “They are constrained in terms of their own capacity. If ships are being delayed it is because TSI cannot unload them quickly enough. We had to deal with bad weather and other issues.” Days later CN agreed to increase rail car supply by several thousand feet from 11,000 feet a day (National Post, 25 Feb, 2005).

Dennis Benikel, responsible for the supply chain at the Port of Vancouver Authority, claims that the entire supply chain in Canada must become more throughput-focused in order to avoid prospective bottlenecks. Not just that of the Port of Vancouver. “We must find new and innovative ways to enhance the throughput — or, in current terminology, the velocity — of the existing system” (D.Bickel). For the Port of Vancouver, this means making new standards and reliability. It means creating financial incentives for reliable and competitive service of performance for every partner in the logistics chain as an attempt to improve its quality. It means monitoring performance. And it means addressing problems in a timely way, and seeking continuous improvement (D. Bickel). Lofty ambitions — but that is where the Port of Vancouver has to go if they still want to be part of the container-transportation game claims Benikel.

49. The Western Transportation Advisory Council (WESTAC) is a forum dedicated to strengthening the Western Canadian economy through improving the region's transportation system. Founded in 1973, WESTAC maintains a cooperative approach to resolving issues. The Council organizes workshops, conferences and meetings to explore timely and relevant issues, and produces high quality publications on topics of importance to the Western Canadian economy (www.westac.com)

NATIONAL POST

Is Vancouver's port backlog just a taste of things to come?: Fears things could get worse during spring, summer

National Post
Fri 25 Feb 2005
Page: FP2
Section: Financial Post
Byline: John Greenwood
Source: Financial Post

The Port of Vancouver, the main gateway for Asian trade, is struggling to cope with surging volumes of freight generated by the economic boom in China. The explosion in trade has strained the port infrastructure, creating record bottlenecks and delays, especially for in-bound traffic.

In fact China's economic expansion has hit all the major ports on the West Coast, turning even Long Beach, Calif. -- one of the biggest in North America -- into a parking lot with ships lining up for several days at a time for a space to unload.

At DeltaPort in Vancouver, the backlog of containers has grown so big it is getting in the way of terminal operations.

Figure 8.3: Port backlog

So what happened after my interview with Mr. Benikel?

Days later, the Vancouver Port Authority and two of the leader firms; P&O Ports Canada and TSI Terminal Systems Inc. announced collective plans to implement extended hours of operations at container terminal truck gates in the Port of Vancouver (D. Bickel; B. Corsan; C. Badger). The program is intended to increase truck gate operations at Vanterm, Centerm and Deltaport by an average of 20 per cent, per year, over the next five years, and is one of many examples of a broader initiative to increase hours of operation throughout the lower mainland ports and off-site terminals (Nov 24, 2005 the Port of Vancouver Newsletter). "Extending gate hour's increases capacity helps to alleviate congestion at the terminals and speeds up transaction times. Extended hours of operations also make more efficient use of the region's road networks by spreading truck traffic over a longer period, reducing congestion during traditional peak times and reducing emissions," said Captain Chris Badger, the VPA's Vice President, Customer Development and Operations. "However, if this initiative is going to be successful", Badger continues, "The port will have to work closely with all stakeholders including the

shipping community, labour organizations, local municipalities and the provincial government”.

So far having discussed some of the collective plans in the Port community and their two competitive strategies in order to increase the Port of Vancouver’s performance as a seaport cluster, the chapter will now go on to what I call the evaluation part in which several policy responses will be discussed as well as possible strategies that the public port authority might adopt to confront the competitive environment.

8.4 What’s Next?

So will the Port of Vancouver succeed? Are the competitive advantages good enough compared to other rival ports’ strategies? And what about the local port authority itself? Can they improve? Are they actually ready to face the transpacific containerization?

According to Gordon Houston, president and chief executive officer of the Vancouver Port Authority opportunities have never been greater for Canada to benefit from the enormous growth in transpacific trade. But, as this thesis has attempted to demonstrate, there are challenges unlike any seen before; - especially when it comes to supply chain issues but also the ability of West Coast ports to actually meet the predicted container growth (F. Pasacreta). Can they make it? And how can you really prepare for a predicted future? To cite Captain Norman Stark, - the former president and CEO of the Vancouver Port Authority who now heads TSI Terminal Systems Inc., operator of Deltaport and Vanterm - “[...] I am always optimistic. I think the Port of Vancouver has a great future. When you see the other end of the funnel, you see that the opportunities are endless. The future is ours. It’s up to us. The challenge, however, first and foremost is one of sheer growth,” claims Capt. Stark, - noting that he recently visited the new Yangshan terminal at the mouth of China's Yangtze River. “At Yangshan” Stark says, “they have five berths completed already, three miles of terminals, 18 container cranes, and they have started work on another five berths. The plan is for 52 berths handling 26 million TEUs. And this

is only one terminal development. Compare their situation with what we are facing here. At TSI, on the other hand, we have been trying for years to get (environmental) approval to add one berth at Deltaport.” (Canada-Asia Maritime Conference, 2006). Therefore to get over the next couple of years; the whole supply chain will have to become even more efficient. Equally important, there must be a continuous working partnership between the Port, the federal - and provincial governments to solve any collective action problems in order to fully realize the vision to be the most competitive port system on the west coast of the Americas.

The only worthy conclusion therefore, from my point of view, after going to through some of the material from the fieldwork, is that the Port of Vancouver has to become a catalyst, a leader and a driver of integrated action across the transportation system if they are to succeed in the coming future. They have to change their traditional role. More important, the local port authority must work closer than ever before with the shipping lines. Every dark cloud on an otherwise bright horizon has a silver lining. To put it differently, if the Port of Vancouver is going to benefit, there has to be a concerted effort to make sure everyone benefits. One suggestion is thus to adopt measures to ensure that the carriers become more deeply attached to them. An approach, employed by the U.S. ports, involves granting users very favorable terms such as reduced fees and harbour dues, for long-term leases of terminals. Here the carriers pay a substantial part of the development costs and equipment purchases. K-Line for instance recently signed an unprecedented 25 year lease for the exclusively use of a facility at Tacoma. By encouraging the carriers to commit themselves through investments and long-term leases, the likelihood of their re-location to another port, it is believed, will be reduced, and the capital costs can be shared.

However, there are problems to this solution (as any solution). One of the difficulties is that the Port has to give something to the shipping lines in return. This normally involves the lines being given greater control over operations through single-user occupancy. Many ports, including the Port of Vancouver, maintain multi-user facilities that achieve enviable throughputs, but do not permit one line to have exclusively rights. In order to

entice private investments then, these ports will have to consider single user or preferential-user occupancy as an alternative. This becomes very difficult for a local port authority and especially if there are many smaller lines requiring berths and all the prime sites have been leased to larger ones.

But although ports, as I said in the beginning, are now considered as one of many links in the logistical chains, there are still opportunities to exploit in order to be competitive. Including that of Vancouver. These opportunities require ports to become even more deeply involved in physical distribution systems; inventory control, security, data management, packing and processing. These will not come to the ports by themselves but only through careful planning and policies being promoted. For this reason, then, it seems to me that the local port authority in Vancouver must play a much more decisive role than before, that is, to become a catalyst for the port development. Or a “cluster-manager” as de Langen calls it. This is not a function most landlord port authorities have been used to but in order to accommodate the kind of growth the Port of Vancouver expects and to avoid further congestions in the Lower Mainland communities, the VPA is to a certain extent, “forced” to act as a ‘facilitator-voice’ in the transport chains in addition to their traditional landlord role. They are indeed in an excellent position to play a leading role in such initiatives as the pivotal location for international movements. And today’s competitive realities demand leadership. Their interest generally concerns the overall efficiency and growth of trade rather than the performance of particular sectors. The VPA should therefore constantly rethink and broaden their role as facilitator. Initiative, co-operation and consultation constitute the key words underlying a proactive port management strategy. This means creating a platform in which the VPA is working together with its various stakeholders (carriers, shippers, transport operators, labour and government bodies) to identify and address issues affecting logistics performance. The pro-active Rotterdam port authority provides an excellent example here which is both actively involved with private industries in developing distribution and in logistic services on port land adjacent to the docks. In Table 8.3 below a distinction between two types of justifications for investments of port authorities is made: justification with reference to the role of port authorities as *landlords*, and reference to the role of port

authorities as *cluster managers*. Investments justified with reference to the landlord role are those investments that a) improve the quality and safety of the transport node and b) are recovered directly from the shippers and terminal operators. Investments on top of the landlord investments however, are justified from the perspective that a port authority is also a cluster manager (de Langen 2004b). Table 8.3 also shows examples of investments whose costs can be recovered with direct charges and investments that need to be financed in an indirect manner.

Table 8.3: The Role of Port Authorities as Cluster Managers

Role of port authority	Direct cost recovery	Indirect cost recovery
Investments in port cluster (location)	Hinterland terminals (dry ports) Industrial pipeline infrastructure Logistics zones Dedicated freight transport systems Venture capital provision Office space provision	Web-based port community system ICT system for commodity trade Innovation platforms and research projects Training and education infrastructure Promotion port as working environment
Investments in transport node	Quay construction Land reclamation and development Cargo handling equipment Traffic control Dredging Waste collection	Port security Port marketing and promotion

Source: P. de Langen (2004b:117)

However, while there is scope for the port to adopt new competitive strategies, it must be recognized that their present and administrative structure is a major impediment. The shipping lines are able to play one port off against another simply because of the independence ports enjoy in many jurisdictions around the world. As autonomous bodies, the Port of Vancouver, as everyone else, is guided ultimately by self-interest, and thus allows *themselves* to become, to use Slack’s expression, pawns in the global game played by “the vagabonds” [the shipping lines] looking for the best deal. One solution to this problem might be for the national government to exert even greater control over Vancouver’s port development. That is, by rationalizing public capital investments and by subjecting all development proposals to a national review agency, it might be possible to prevent the duplication of facilities and to plan port development more efficiently. However, it is, from my point of view, very unlikely that the present political in most

countries, - including Canada, would allow a tightening of state control over ports, especially since deregulation, privatization and decentralization are extremely powerful forces that are reinforcing the independence of the port administrations world-wide. It is for that reason several port authorities in North America have proposed setting up informal arrangements, i.e. The Canada-Asia Maritime Conference in Vancouver (2006), whereby all elements of the logistics supply chain from shippers and carriers to ports, terminal operators and freight forwarders, as well as government officials on the same maritime range meets to discuss matters of common concern, and, it is hoped, to coordinate investment decisions more fully. That is, how to cope with burgeoning Canada-Asia Trade, private-public partnerships agreements, discuss initiatives that are being developed to deal with port congestions and surface transportation bottlenecks and finally, look at the best way to develop an efficient, collective integrated transportation system that can capture growth opportunities in Asia. “We have no time in British Columbia for our ports to be competing with one another. Rather it’s time to reach out and compete against the ports in Long Beach and the Ports of Seattle. And frankly, I don’t want our ports fighting one another, I want our ports fighting the competition which is south of the border and up and down the coast” said Premier Gordon Campbell to the Daily Post (7 Febr. 2005). Whether cooperation like this is helpful or not in order to facilitate the forecasted container growth, however, remains to be seen. It would appear to make sense, particularly now that the lines themselves are coming together to operate services jointly in some markets. Perhaps the ports can follow suit.

An alternative solution therefore might be to privatize the port as a major difficulty for public-owned ports as the Port of Vancouver is to achieve profits. Given the fact that in practice no major general cargo port on mainland is in a monopoly situation, the need for public control (and investment) no longer exists. Experience from Britain, where private ports such as Felixstowe are very successful, clearly demonstrates that the public interest can be well served by privately owned installations (Slack 1993). But this is not to say that port privatizations have been without problems. There have in fact been a number of incidents of privatizations involving ports that have not worked out. It is not a surprise therefore that fully privatized ports (which often take the form of a private service port)

are few in number as full privatization is considered as an extreme form of port reform. It suggests that the State no longer has any meaningful involvement or public policy interest in the port sector. In fully privatized ports, port land is privately owned, contrary to the situation in other port management models. This requires the transfer of ownership of such land from the public to the private sector. Additionally, along with the sale of port land to private interests, some governments may simultaneously transfer the regulatory functions to private successor companies. In the absence of a port regulator in the UK, for example, privatized ports are essentially self-regulating. The risk in this type of arrangement is that port land can be sold or re-sold for non-port activities, thereby making it impossible to reclaim for its original maritime use (World Bank, 2002).

The problem in B.C., however, is that many public port authorities such as the Port of Vancouver exert enormous political power. It would for that reason require very strong political will to privatize the present structure, as attractive as that solution might appear in removing public financial commitments in a period of dwindling public resources. Furthermore, if privatization were pursued as a policy option, the elected officials would have to anticipate the financial collapse of some ports, with the resultant political backlash. But more interesting, would all of the challenges and difficulties the Port of Vancouver is facing be solved any better if they get privatized? That is, would the congestions and bottlenecks disappear? Other challenges? Probably not. An intermediate policy option, therefore, might be to leave the Port of Vancouver under public control as it is today, but with the stipulation of greater governmental financial probity and private sector investment in port operations. It has been widely demonstrated that use of private sector companies throughout the range of port operations provides an opportunity to eliminate traditional, bureaucratic operating procedures and controls, and modernize facilities and equipment through new financing channels (Slack, 1993). But more important, by passing the reins of port operations from the public to the private sector, privatization offers the ability to shift the financial burden of port expansion and development to the beneficiaries of the expenditures. There are in fact numerous success stories where port authorities have transferred to the private sector operations previously performed by public employees according to the World Bank (2002). In Buenos Aires,

for example, the award of terminal concessions to four competing companies in 1994 has brought down handling charges significantly through improved labor productivity. After transferring major port facilities to the private sector between 1995 and 1998, Panama attracted more than \$380 million in investments for modernization and expansion (!) (World Bank 2002).

But this is not to say that port privatizations have been without problems (World Bank 2002). There have in fact been a number of incidents of privatizations involving ports that have not worked out. In Indonesia for instance, the Koja container terminal under private management ran into difficulties and the public port company took back the facilities. The city of Rostock has demanded return of the terminal it contracted to a private group for operation, citing lack of compliance with the original contract. Following a dispute with the Port Authority of Trieste, the commercial terminal operator (Europe Combined Terminals - ECT) selected to operate the container terminal in the port under a 30-year contract withdrew from the contract after eighteen months. The terminal operator awarded the concession to operate the container terminal in the Port of Rosario is reported to have lost more than \$40 million under the contract as a result of work disputes and has cancelled the contract (World Bank, 2002). And unfortunately, the success story in Kipevu in Panama as mentioned above became reversed when the commercial terminal operator terminated its contract with the port as a result of breakdown of equipment that the government failed to refurbish or replace. But if the Port of Vancouver is going to succeed in the immediate future, they have to think “big”. And more important, they have to make better use of the private leader firms. Otherwise they will be ousted.

8.5 Conclusion

The Port of Vancouver is being confronted by enormous challenges today, as the container revolution continues to mature. Ports have become just one set of links in multimodal transportation chains. The old determinants of competition have changed, as

ports are finding that they no longer control their own destinies. Developments in maritime space, reflected in the activities of the mega ocean carriers, now influence port traffic to a great degree.

This chapter has argued that the solutions do not lie in ports seeking to out equip each other to retain and attract traffic. Rather, the solutions that are suggested require the Port of Vancouver to develop competitive strategies to meet the challenges of intermodalism and the evolving distribution systems. That is, they have to reach out to all of their partners in the Canadian transportation system — to private industry, governments, labour, shippers and even communities — to change the way they manage the logistic chain. If not, the Port of Vancouver won't be a reliable and competitive gateway for Asia-Pacific trade, or being able to achieve the growth targets the Port has set for themselves. In other words, the Port of Vancouver needs a change in both purpose and organization to ensure greater stability and commitment.

9. Final Comments

In the very beginning of my fieldwork I attended the Vancouver Board of Trade conference “Developing the Pacific Gateway Strategy”. The predicted conclusion for each contribution, and for the summary of the day, was that the Port of Vancouver needs to think “big” in order to compete, grow and capture a share of international trade; “none of us should be satisfied with five per cent of our trade taking place with the world’s fastest-growing economy” (Houston, Vancouver Board of Trade 2005). The evolution in Canadian regions and local communities is undoubtedly affected by global changes. What is interesting, however, is *how* the Port of Vancouver will act in accordance with these changes, and to what extent they can control the changes themselves.

As early as in 1997 Ståle Seierstad stated that the local and regional dimensions in the economic life crumble when meeting today’s global markets and that business policy needs to take measures to link enterprises to national and international networks (Seierstad 1997). While Seierstad’s approach in many ways reflected the polarized debate about globalization versus regionalization (which I referred to in the beginning of the thesis) this study is based upon an understanding of cooperative processes and structures in which the local port-community is considered to be a phenomenon that is being continuously developed through its actors and that responds to global and national processes.

I have, for this reason, throughout the thesis argued that the making of new and further competitive advantages through collective strategies is a way to act *proactive* on the global arena. For paradoxically, as Porter (1998b) puts it, “the enduring competitive advantages in a global economy are often heavily local, arising from concentrations of highly specialized skills and knowledge, institutions, rivals, related businesses and sophisticated customers in a particular region”.

9.1 Conclusion

With this thesis the author has tried to follow a method for social science research based on what Askildsen (2002:267) describes a “two-route strategy between the abstract and the concrete” in search for basic concepts that drive the seaport cluster in British Columbia’s Lower Mainland. That is, how the increasing transpacific container trade with Asia shapes the port’s expansion plans and other economic activities, and, of course, how competitive strategies are being created.

According to this particular method of research, the labour of conceptualization follows a route of abstraction, where objects and phenomena – already conceptualized and with some “proto-theory” attached to them - are re-conceptualized in order to reveal their essential constitutive elements, their emergent powers according to Askildsen. But unfortunately (for me and others) Sayer (1992) never gave a recipe on how to actually practice abstraction; he only provided a partial guidance in “Methods in Social Science”. “[..]This leaves us with the impression that no matter how to remote from daily life outlay of the method can seem to be, there is something explicitly practical about the abstraction process: picking out objects and phenomena, tossing and turning them around, and tearing them apart in a search for what they are actually made up of” (Askildsen 2002:267).

The aim of this thesis has been to investigate how the increasing transpacific container trade affects the Port of Vancouver and in what way the local port authority (VPA) is responding. That is, traditionally, a seaport was viewed as a transit area; a gateway through which goods and people move from and to the sea (Hazendonck 2001). As such, it was a place of contact between land and maritime space, a knot where ocean and inland transport lines meet and intertwine an inter-modal place of convergence (see Weigend 1958, Hayuth 1985). But in the course of time -as this thesis has demonstrated- fundamental changing processes have broadened and deepened the functions of sea ports. The modern sea port has in fact evolved from a pure transshipment centre to “a function in a logistics system” in a broader technological system. For this reason, as stated in 1.3, seaports can be regarded as ‘text-book cases’ of clustering as these regions attract

substantial numbers of port related firms. I have therefore chosen to draw upon a modified Porterian cluster- and governance theory on the suggestion of Hazendonck (2001) and de Langen (2004b) in analyzing the Port of Vancouver community as Porter's cluster metaphor is highly generic in character. That is, being deliberately vague and sufficiently indeterminate as to admit a very wide spectrum of industrial groupings and specializations (from footwear clusters to biotechnology clusters), demand-supply linkages, factor conditions, and institutional set-ups, while at the same time claiming to be based on what are argued to be fundamental processes of business strategy and economic interaction. The second reason why I chose to make use of Porter's cluster approach is simply because spatial clustering is at the very hard core of what research in economic geography is all about (see 1.3). Thirdly, the analysis of seaport governance is often limited to the role of the port authority and the appropriate mix of public and private investments. Notwithstanding the central role of port authorities, these are but one 'actor' that aims at improving the quality of collective action regimes in port clusters. Other actors, e.g. leader firms and branch associations, as demonstrated in this thesis, can also be important for the governance of change in port clusters. The application of the cluster concept has therefore resulted in more clarity on clustering in seaports (see Ch. 6);

1. It has become clear that the Port of Vancouver might be considered as a seaport cluster. In Vancouver, the port cluster consists of substantial numbers of firms, all related to the arrival of ships and goods in seaports. The majority of value added and employment in the cluster is not generated in primary port activities (cargo handling), but in related activities, such as logistics, manufacturing and trade concentrated in the seaport or nearby.
2. It is possible to identify a port cluster region. Vancouver's port activities are distributed over a number of municipalities and not limited to the port city.
3. A 'general' list of cluster activities can be compiled. Such a list consists of all firms active in cargo handling, transport and logistics, and manufacturing and trading firms in a small number of 'chains' such as chemicals and grain, and can be used to compare port clusters worldwide (i.e. B.C. Ports Handbook 2005).

For more than a century, the Port of Vancouver has played a vital role in fostering trade for the region and the country as well as providing a wealth of employment and economic benefits. Today, the Port with its community and business partners is building stronger national and international business relationships, more efficient ways to work with the nation's infrastructure and strategic plans to develop port property. The future holds great promise; before them lie tremendous potential to capture economic growth and prosperity as a result of increasing Asia-Pacific trade. China, in particular, is reshaping the world economy and the Port of Vancouver is in a unique position to harness the resulting opportunities. However, capturing the tremendous economic potential requires a good plan and the support of their communities and all levels of government. But more important, it requires improved and new terminal facilities. For this reason, as shown in Ch. 7, five different terminal infrastructure projects are either planned or underway at the Port of Vancouver (in addition to several improvements), which will increase the Port of Vancouver's terminal capacity by 3.6 million TEUs to a total of 5.3 million TEUs. Globalization has therefore led to a paradoxical situation. Adjustments to the globalization phenomena must necessarily take place at the local level.

But even though the Port of Vancouver responds to the increased demands of private shipping companies with new terminals sites, dredging approach channels, and new gantry cranes, a major effect is that the local port authority find themselves less and less in control of their destinies as their clients of long standing are demonstrating little loyalty in maintaining their business activities in the port due to consortium and partnership agreements among private-owned port clients. The fact that shipping companies are operating in a freer, deregulated environment than the publicly-owned seaports means that these companies may switch their network operations to the benefit of their finances as opposed to the satisfaction of any regulation of operations imposed by governments. The Port of Vancouver has in other words become a pawn in a game of commerce, - global in scale and in which the major players are private container corporations whose interests rarely coincide with the local concerns of the port administrations.

List of References

- Albino, V. et al. (1999). Knowledge Transfer and Inter- firm Relations in Industrial Districts: The role of the leader firm. *Technovation*, Vol. 19. 53-63.
- Armitage, D. (2001). *Burrard Inlet. A history*. Harbour Publishing, B.C. Canada.
- Askildsen, T. (2002). *Driving forces in Road Goods Transport Development*. Unipub AS, Oslo.
- Baden-Fuller, C. & G. Lorenzoni. (1995). Creating a Strategic Center to Manage a Web of Partners. *California Management Review*, Vol. 37, No. 3. 146-
- Bennett, R.J. (1998). Explaining the Membership of Voluntary Local Business Associations: The Example of British Chambers of Commerce. *Regional Studies*, Vol. 32, No. 6. 503-514.
- Berg, B. (1989). *Qualitative Research Methods for the Social Sciences. 3rd edn*. Allyn & Bacon, London.
- Bhaskar, R. (1975). *A Realist Theory of Sciences*. Leeds Books, Leeds.
- Burgess, R. (1984). *In the Field: An Introduction to Field Research*. Allen & Unwin, London.
- Button, K.J. (1993). *Transport Economics*. Edward Elgar, Cheltenham.
- Cairncross, F. (1998). *The death of distance: how the communications revolution will change our lives*. Orion Business Books, London.
- Campbell, J.L. et al. (1991). *Governance of the American Economy*. Cambridge University Press, Cambridge.
- Canadian Transportation Agency and the Railway Association of Canada. (2005). *Canada's Railways: Emerging Issues; Clear Options*, 9th CTA/RAC Annual Workshop on Railway Issues. Montreal. April 14th, 2005.
- Carrol, L. (1872). *Through the Looking Glass and What Alice Found There*. Electronic Text Center, University of Virginia Library.
- Cloke, P. et al. (2000). Ethics, reflexivity and research: encounters with homeless people. *Ethics, Place and Environment*, Vol. 3. 133-54.
- Cloke, P. et al. (2004). *Practicing human geography*. Sage Publications, London. 123-168.
- Collier, A. (1994). *Critical realism, an introduction to Roy Bhaskar's philosophy*. Verso, London.

Crouch, C. & H. Farwell. (2001). Great Britain: falling through the holes in the network concept. *Crouch, C. et al.(eds). Local Production Systems in Europe: Rise or Demise?* Oxford University Press, Oxford.163.

Declercq, E. & A. Verbeke. (1996). Moderne logistiek en het goederenvervoer via Shortsea Shipping. *Tijdschrift Vervoerwetenschap, Vol. 3.* 195-214.

Dicken, P. (1998). *Transforming the world economy.* Paul Chapman, London.

Drewry Shipping Consultants Ltd. (1998). *World Container Terminals; Global Growth & Private Profit.* London.

Frankel, E. G. (1989). Strategic planning applied to shipping and ports. *Maritime Management and Policy, Vol. 16, No. 2.* 123-132.

Fujita, M. & T. Mori. (1996). The Role of Ports in the Making of Major Cities: Self-Agglomeration and Hub-Effect. *Journal of Development Economics, Vol. 49, No 1.* 93-120.

Goss, R.O. (1990). Economic Policies and Seaports 2: The Diversity of Port policies. *Maritime Policy and Management, Vol.17, No. 3.* 221-234.

Graham, E. (1997). Philosophies underlying human geography research. *Flowerdew, R. & D. Martin. (eds). Methods in human geography: a guide for students doing a research project.* Pearson/Prentice Hall, Harlow.

Greater Vancouver Gateway Council. (2003). *Economic Impact Analysis of Investment in a Major commercial transportation system for the Greater Vancouver Region.* GVGC, Vancouver.

Gregory, D. (1978). *Ideology, science and human geography.* Hutchinson, London.

Greig, M.J. (2002). The End of Geography? Globalization, Communications, and Culture in the International System. *Journal of Conflict Resolution, Vol. 46.* 225-243.

Haezendonck, E. (2001). *Essays on Strategy Analysis for Seaports.* Garant, Leuven.

Hammersely, M. & P. Atkinson. (1995). *Ethnography: Principles in Practice. 2nd edn.* Routledge, London.

Harré, R. (1979). *Social being: a theory for social psychology.* Basil Blackwell, Oxford.

Harrison, B. (1994). *Lean and Mean, the Changing Landscape of Corporate Power in the Age of Flexibility.* Basic Books, New York.

Harvey, D. (1973). *Social justice and the city.* John Hopkins University Press, Baltimore.

Hayuth, Y. (1985). Sea ports: the challenge of technological and functional changes. *Borgese, E.M. & N. Ginsburg (eds). Ocean Yearbook 5.* University of Chicago Press, Chicago. 79-101.

Heaver, T.D. (1993). Shipping and the Market for Port Services. *Blauwens, G. et al. (eds.). De dynamiek van een haven.* Pelckmans, Kapellen. 227-248.

- Heaver, T.D. (1995). The Implications of increased competition among ports for port policy and management. *Maritime Management and Policy*, Vol. 22, No. 2. 125-133.
- Hollingsworth, J.R. & L.N. Lindberg. (1985). The Governance of the American Economy: the Role of Markets, Clans, Hierarchies, and Associative Behaviour. *Schmitter, P.C. & W. Streeck. (eds). Private Interest Government*. Sage Publications, Beverly Hills. 221-255.
- Hollingsworth, J.S. & R. Boyer. (1997). *Contemporary Capitalism: the Embeddedness of Institutions*. Cambridge University Press, Cambridge.
- Hughes, A. & L. Cormode. (1998). Theme Issue: researching elites and elite spaces. *Environment and Planning A*, Vol. 30. 2095-180.
- InterVISTAS Consulting Inc. (2005). *Economic Impact Update*. InterVISTAS, Vancouver.
- Jakobsen, E. W., A. Mortensen, et al. (2003). *Attracting the winners - the competitiveness of five European maritime industries*. Kolofon, Oslo.
- Jessop, B. (1997). Capitalism and its Future: Remarks on Regulation, Government and Governance. *Review of International Political Economy*, Vol. 4, No. 3. 561-581.
- Krugman, P. (1991). *Geography and Trade*. The MIT Press, Cambridge Massachusetts.
- Krugman, P. (1997). *Pop Internationalism*. The MIT Press, Cambridge Massachusetts.
- Kvale, S. (1997). *Det kvalitative forskningsintervju*. Ad Notam Gyldendal, Oslo.
- Langen, P.W. de (2004a). The Performance of Port Clusters. *Journal of International Logistics and Trade*, Vol. 2. No. 1.
- Langen, P.W. de (2004b). Analysing the performance of seaport clusters. *Pinder, D. & B. Slack (eds). Shipping and Ports in the 21st Century*. Routledge, London.
- Langen, P.W. de & Michiel Nijdam. (2003). *Leader Firms in the Dutch Maritime Cluster*. Conference paper, The ERSA 2003 Congress, Erasmus University, Rotterdam.
- Lazerson, M. & G. Lorenzoni. (1999). Resisting Organizational Inertia: The evolution of industrial districts. *Journal of Management and Governance*, Vol. 3. 361-377.
- Levinson, M. (2006). *The box: how the shipping container made the world smaller and the world economy bigger*. Princeton University Press, Princeton.
- Ley, D. & M.S. Samuels. (1978). *Humanistic geography: prospects and problems*. Maaroufa Press, Chicago.
- Lorange, P. (1980). *Corporate Planning: An Executive View point*. Prentice-Hall, Englewood Cliffs.
- Malmberg, A. & P. Maskell. (2002). The elusive concept of localization economies: towards a knowledge-based theory of spatial clustering. *Environment and Planning A* 34, No. 3. 429-449.

- Malmberg, A. (2002). *Why the cluster is causing continuing confusion- despite being potentially a core concept in economic geography*. Paper presented at the Cluster Workshop. University of Lund, Sweden, 5. April.
- Malmberg, A. (2003). Beyond the cluster – local milieus and global connections. *Peck, J. & H. Yeung (eds). Remaking the Global Economy*. Sage Publications, London.
- Markusen, A. (1996). Sticky Places in Slippery Space: A Typology of Industrial Districts. *Economic Geography, Vol. 72, No. 3*. 293-313.
- Marshall, A. (1890). *Principles of Economics*. Macmillan, London.
- Marshall, C. & G.B. Rossman. (1999). *Designing qualitative research. 3rd edition*. Sage Publications, London. 106-128.
- Martin, R. & P. Sunley (2003). Deconstructing clusters: chaotic concepts or policy panacea? *Journal of Economic Geography, Vol. 3*. 5-35.
- Massey, D. (1984). *Spatial divisions of labour*. Hutchinson, London.
- McCalla, R. J (1999). Global Change, local Pain: intermodal seaport terminals and their service areas. *Journal of Transport Geography, Vol 7, No.4*, 247-254.
- Ministry of Small Business and Economic Development and Ministry of Transportation. (2005). *British Columbia Ports Strategy*. British Columbia.
- Mistri, M. (1999). Industrial Districts and Local Governance in the Italian Experience. *Human Systems Management, Vol. 18*. 131-139.
- Mossberger, K. & G. Stoker. (2001). The Evolution of Urban Regime Theory the Challenge of Conceptualization. *Urban Affairs Review, Vol. 36, No. 6*. 810-835.
- Moulaert, F. & A. Sekia. (2003). Territorial Innovation Models: A Critical Survey. *Regional Studies, Vol. 37*. 289-302.
- Nooteboom, B. (1999). *Interfirm Alliances: Analysis and Design*. Routledge, London.
- Nooteboom, B. (2000). Institutions and Forms of Co-ordination in Innovation Systems. *Organization Studies, Vol. 21, No. 5*. 915-932.
- Notteboom, T. & W. Winkelmanns. (2001). Structural Changes in Logistics: how will Port Authorities face the Challenge? *Maritime Policy and Management, Vol. 28, No. 1*. 71-89.
- Novacorp Consulting Inc. (2005). *Greater Vancouver Short-Sea Container Shipping Study*. Vancouver.
- Olson, M. (1971). *The Logic of Collective Action: Public Goods and the Theory of Groups*. Harvard University Press, Cambridge Massachusetts.

- Organization for Economic Co-operation and Development (OECD). (2000). *Land Access to Seaports*. Paris.
- Piore, M. & C. Sabel. (1984). *The Second Industrial Divide: Possibilities for Prosperity*. Basic Books, New York.
- Porter, M.E. (1990, 1998a). *The Competitive Advantage of Nations*. MacMillan, London.
- Porter, M.E. (1998b). Clusters and the New Economics of Competition. *Harvard Business Review*, Vol. 76, No. 6. 77-90.
- Porter, M.E. (1998c). *On Competition*. Harvard Business School Press, Harvard.
- Ragin, C.C. (1994). *Constructing social research: the unity and diversity of method*. Pine Forge Press, Thousand Oaks.
- Rubin, H.J. & I. Rubin. (1985). *Qualitative interviewing: the art of hearing data*. Sage Publications, Thousand Oaks.
- Sabel, C. (1989). Flexible specialization and the re-emergence of regional economies. P. Hirst & J. Zeitlin (eds). *Reversing Industrial Decline: Industrial Structure and Policies in Britain and Her Competitors*. Berg Publishers, Oxford. 17-70.
- Sandler, T. (1992). *Collective action: theory and applications*. Harvester Wheatsheaf, New York.
- Satoshi, I. (2002). *Ports as Indispensable Partner of Maritime Transport*. Paper presented to the Maritime Transport Committee, OECD, Paris, 16 July.
- Sayer, A. (1984). *Method in social science: a realist approach*. Hutchinson, London.
- Sayer, A. (1992). *Method in social science, a realist approach, 2nd edition*. Routledge, London.
- Sayer, A. (2000). *Realism and Social Science*. Sage Publications, London.
- Schoenberger, E. (1991). The corporate interview as a research method in economic geography. *Professional Geographer*, Vol. 43, No. 2. 180-189.
- Schoenberger, E. (1997). *The Cultural Crisis of the Firm*. Cambridge, England.
- Scott, A.J. (1998). *Regions and the World Economy*. Oxford University Press, Oxford.
- Seierstad, S. (1996). Regioner i oppbrudd : regional næringsomstilling belyst med teori og eksempelstudier. *AFIs rapportserie*, Vol. 7. Arbeidsforskningsinstituttet, Oslo.
- Silverman, D. (1993). *Interpreting qualitative data : methods for analysing talk, text and interaction*. Sage Publications, London.
- Smith, M. (1998). *Social Science in Question*. Sage Publications, London.
- Slack, B. (1993). Pawns in the Game. *Growth and Change*, Vol. 24, 579-

- Slack, B. (1998). Intermodal transportation. *Hoyle, B.S. & R.D. Knowles (eds). Modern Transport Geography, Second ed.* Wiley, Chichester.
- Smith, S.J. (1988). Constructing local knowledge: the analysis of the self in everyday life. *Eyles, J. & D.M. Smith (eds). Qualitative Methods in Human Geography.* Polity Press, Cambridge. 17-38.
- Stevens, H. (1999). *The Institutional Position of Sea Ports: an International Comparison.* Kluwer Academic Publishers, Dordrecht.
- Stopford, M. (1997). *Maritime Economics, 2nd edition.* Routledge, London.
- Swann, G.M.P. (1998). Towards a model of clustering in high technology industries. *Swann, G.M.P. et al. (eds). The dynamics of Industrial Clustering: International Comparisons in Computing and Biotechnology.* Oxford University Press, Oxford.
- Sæther, B. (1999). *Regulering og innovasjon: miljøarbeid i norsk treforedlingsindustri 1974-1998.* Universitetet i Oslo, Oslo.
- Valentine, G. (1997). Tell me about...: using interviews as a research methodology. *Flowerdew, R. & D. Martin. (eds). Methods in human geography: a guide for students doing a research project.* Pearson/Prentice Hall, Harlow.
- Van Klink, H.A. & L. Van Den Berg. (1994). *From City-port to Port-network.* Discussion paper, TI 95-48. Tinbergen Institute, Amsterdam.
- Vancouver Port Authority. (2005). *The Land Use Plan for the Port of Vancouver.* VPA, Vancouver.
- Webb, S. & B. Webb. (1932). *Methods of Social Study.* Longmans Green & Co, London.
- Weigend, G.G. (1958). Some elements in the study of port geography. *Geographical Review, Vol. 48.* 185-200.
- Wijnolst, N. (2003). *European Maritime Clusters.* Delft University Press, Delft.
- Williamson, O. E. (1985). *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting.* The Free Press, New York.
- World Bank. (1992). *Port Marketing and the Challenge of the Third Generation Port.* World Bank, Geneva.
- World Bank. (2002). Port Reform Toolkit. World Bank, Washington, D.C. (Also available from <http://www.worldbank.org>).
- Yeung, H.W. (1997). Critical Realism and Realist research in human geography: a method or a philosophy in search for a method? *Progress in Human Geography, Vol. 21, No.1.* 51-74.
- Yin, R. K. 1994. *Case Study Research: design and methods.* Applied social science methods series, Thousand Oaks, California

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Appendices

A1: List of Interviewees

<i>Name</i>	<i>Company</i>	<i>Profession</i>	<i>Date of Interview</i>
Warren Gill	Simon Fraser University (SFU)	Vice President, University Relations	Nov. 15 th , 2005
Roger Hayter	Simon Fraser University (SFU)	Professor, Department of Geography	Nov. 16 th , 2005
Erik Tofsrud	Cascadia Materials Inc.	President & CEO (Previous President & CEO in Vancouver Port Authority)	Nov. 25 th , 2005
Nina Schwarck	Oldendorff Carriers	Operations Manager	Nov. 25 th , 2005
Nial Fletcher	Oldendorff Carriers	Chartering Manager	Nov. 25 th , 2005
David Cook	Oldendorff Carriers	Chartering Manager	Nov. 25 th , 2005
Graham Baxter	Star shipping	Director Atlantic	Nov. 25 th , 2005
Bill Corsan	Vancouver Port Authority	MCIP, Planner	Nov. 28 th , 2005
Susan Buss	Vancouver Maritime Museum	Librarian	Nov. 29 th , 2005
Erik Knoph	Gearbulk Shipping Canada Ltd.	Manager, Business & System Developer	Nov. 30 th , 2005
Blake Pottinger	Anglo Canadian Shipping Company	President & CEO	Dec. 2 nd , 2005
Frank A. Pasacreta	British Columbia Maritime Employers Association (BCMEA)	President & Chief Executive Officer	Dec. 5 th , 2005
Bonnie Gee	Chamber of Shipping of British Columbia	Manager, Member Services & Development	Dec. 5 th , 2005
Erik Knoph	Gearbulk Shipping Canada Ltd.	Manager, Business & System Developer	Dec. 8 th , 2005
Stephen Brown	Gearbulk Shipping Canada Ltd.	Acting General Manager	Dec. 8 th , 2005
Dennis A. Bickel	Vancouver Port Authority	P.Eng. Manager, Logistics	Dec. 9 th , 2005
Chris Badger	Vancouver Port Authority	Vice President, Customer Development and Operations	Dec. 12 th , 2005
R.V. Bob Wilds	Greater Vancouver Gateway Council	Managing Director (Previous President & CEO of the BCMEA)	Dec. 12 th , 2005
Ruth Sol	Western Transportation Advisory Council (WESTAC)	President	Dec. 12 th , 2005

- 6 additional informants wanted to be anonymous.

A2: Interview Guide – an Example

Issue	Hypothesis (potential additional questions)	Issues for expert interviews
General	<p>P1: Differences in the governance of a cluster have an effect of the performance of port clusters.</p> <p>P1a: The development of port clusters is a result of the interplay of market forces and (inter)national policies. The quality of local governance does not have a substantial effect on performance.</p>	<p>a) What actors play a role in the governance of the port?</p> <p>b) What is the institutional structure of the port cluster?</p>
Trust	<p>P2: The level of trust can vary between port clusters. Trust lowers transaction costs and thus contributes to the performance of a port cluster.</p>	<p>a) Is there a culture of trust in the port community?</p> <p>b) How, and in what way?</p> <p>c) What about reputation effects?</p>
Presence of leader firms	<p>P3: The presence of embedded leader firms adds to the performance of port clusters</p>	<p>a) Who are the leader firms? Why these?</p> <p>b) Is it their strategy to have a positive impact on the cluster as a whole?</p>
Quality of solutions for CAP's (collective action problems)	<p>P4: The quality of solutions to collective action problems influences the performance of the port cluster.</p> <p>P5: The collective action problem in seaports is relevant for the issues innovation, education and training, marketing and acquisition, internationalization and hinterland access.</p> <p>Experts are asked to indicate whether the five CAP's are present, the importance of these CAP's and the quality of the solutions to these CAP's.</p>	<p>a) What forms of cooperation have developed in seaports?</p> <p>b) How do actors try to create coalitions to solve CAP's?</p> <p>c) To what extent do port authorities act as cluster managers?</p>