

STRATEGIC MANAGEMENT IN THE GLOBAL CONTAINER SHIPPING INDUSTRY

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CONTENTS

	Page No.
List of tables	1
List of figures	2
Acknowledgements	3
Abstract	4
1 INTRODUCTION	6
1.1 Introduction	7
1.2 Context of the research	8
1.3 Aims and objectives	9
1.4 Outline of chapters	10
2 RESEARCH METHODOLOGY	12
2.1 Introduction	13
2.2 Research approaches	13
2.2.1 Forms of research	13
2.2.2 Quantitative and qualitative research	14
2.2.3 Positivism and phenomenology	16
2.2.4 Positivist tradition	18
2.2.5 Phenomenological tradition	20
2.2.6 Issues in qualitative research	22
2.3 Choice of survey method	24
2.3.1 Rationale	24
2.3.2 Criticisms of qualitative research	26
2.3.3 Research design	30
2.3.4 Case study research	31
2.4 Sampling frame/method	35
2.4.1 Research design	35
2.4.2 Sampling	36
2.4.3 Pilot study	40
2.5 Data collection	42
2.5.1 Management research	42
2.5.2 Access to management	44
2.5.3 Interviews	44
2.5.4 Validation and reducing bias	48
2.6 Analytical techniques	49
2.6.1 Grounded theory	49
2.6.2 Data analysis	51
2.7 Limitations of the research	53
2.7.1 Research design	53

2.7.2	Validity	54
2.7.3	Reliability	54
2.7.4	Generalisability	54
2.7.5	Management interviews	55
2.7	Summary	56
3	THE GLOBAL CONTAINER SHIPPING INDUSTRY	58
3.1	Introduction	59
3.2	World container trade	59
3.2.1	World trade	59
3.2.2	World container traffic	60
3.2.3	East-West container trades	62
3.3	Industry structure	64
3.3.1	Carrier consolidation	64
3.3.2	Motives for consolidation	67
3.4	Nature of competition	70
3.4.1	Liner conferences	70
3.4.2	Regulation of liner shipping	72
3.4.2.1	Liner shipping regulation in the USA	72
3.4.2.2	Liner shipping regulation in Europe	74
3.4.2.3	Liner shipping regulation in Asia	76
3.5	Industry competitive dynamics	77
3.5.1	Commercial entities selling cargo space	77
3.5.2	Attempts to differentiate liner services	79
3.5.3	Ocean carrier profitability	81
3.6	Shippers	85
3.6.1	Shipper requirements	85
3.6.2	Global contracts	89
3.6.3	Shippers' Councils	92
3.7	Summary	94
4	STRATEGIC MANAGEMENT IN GLOBAL INDUSTRIES	97
4.1	Introduction	98
4.2	Competing internationally	99
4.2.1	Generic strategies	99
4.2.2	The Value Chain	100
4.2.3	Globalisation pressures	101
4.2.4	Capital in global industries	102
4.3	International strategies	104
4.3.1	Multidomestic strategy	104
4.3.2	Global strategy	107
4.4	Factors leading to globalisation	109
4.4.1	Homogeneous demand	110
4.4.2	Susceptibility to scale economies	110
4.5	Criticisms of the multidomestic versus global distinction	111
4.5.1	Diversity of markets	111

	4.5.2	Flexibility of functional delegation	112
	4.5.3	Economic regulation	113
4.6		Organisational implications	114
	4.6.1	The need for integration and responsiveness	114
	4.6.2	Management capabilities	115
4.7		Integration-Responsiveness Framework (Prahalad & Doz, 1987)	116
	4.7.1	Selecting the analytical framework	116
	4.7.2	Methodological building blocks	117
	4.7.3	Global strategic coordination	117
	4.7.4	Global integration of activities	118
	4.7.5	Local responsiveness	118
	4.7.6	Criteria for analysing global integration and local responsiveness	118
4.8		Summary	120
5		CONTRASTING STRATEGIES IN CONTAINER SHIPPING	122
5.1		Introduction	123
5.2		Corporate origins	124
	5.2.1	Sea-Land service Inc.	124
	5.2.2	Evergreen Marine Corporation	125
5.3		Ships and trade routes	126
	5.3.1	Sea-Land ships and main East-West routes	126
	5.3.2	Evergreen ships and main East-West routes	129
	5.3.3	Sea-Land feeder services	131
	5.3.4	Evergreen feeder services	132
	5.3.5	Sea-Land inland transport services	134
	5.3.6	Evergreen inland transport services	135
5.4		Containers and terminals	135
	5.4.1	Sea-Land container fleet	135
	5.4.2	Evergreen container fleet	136
	5.4.3	Sea-Land terminals	137
	5.4.4	Evergreen terminals	138
5.5		Organisation structure	139
	5.5.1	Sea-Land divisions	139
	5.5.2	Evergreen divisions	141
	5.5.3	Sea-Land sales offices	142
	5.5.4	Evergreen sales offices	143
5.6		Conference affiliation	144
	5.6.1	Transpacific	144
	5.6.2	Europe-Asia	145
	5.6.3	Transatlantic	145
5.7		Market shares and profitability	146
	5.7.1	Market shares	146
	5.7.2	Profitability	148
5.8		Summary	151

6	GLOBAL INTEGRATION AND LOCAL RESPONSIVENESS IN CONTAINER SHIPPING	156
6.1	Introduction	157
6.2	Pressures for global strategic coordination	159
6.2.1	Importance of multinational customers	159
6.2.2	Presence of multinational competitors	162
6.2.2.1	Monitoring competitors	162
6.2.2.2	Main types of competitors	164
6.2.3	Investment intensity	166
6.2.3.1	Ships	166
6.2.3.2	Containers	168
6.2.3.3	Terminals	168
6.2.3.4	Local representation and IT	170
6.3	Pressures for global integration of activities	172
6.3.1	Technology intensity	172
6.3.2	Pressure for cost reduction	175
6.3.3	Universal needs	179
6.3.3.1	Service schedules	179
6.3.3.2	Container requirements	180
6.3.3.3	Non-containerisable cargo	181
6.3.3.4	Overall service	181
6.3.4	Access to raw materials and energy	182
6.4	Pressures for local responsiveness	184
6.4.1	Differences in customer needs	184
6.4.2	Differences in distribution channels	188
6.4.2.1	Price	188
6.4.2.2	Place and promotion	189
6.4.2.3	Product (service)	189
6.4.2.4	Carrier selection	190
6.4.3	Availability of substitutes and need to adapt	192
6.4.4	Market structure	194
6.4.5	Host government demands	196
6.5	Summary: Pressures for integration and responsiveness in the global container shipping industry	201
6.5.1	Evaluation of the framework	201
6.5.2	Pressures for global coordination	203
6.5.3	Pressures for global integration	205
6.5.4	Pressures for local responsiveness	207
6.5.5	Implications for global carriers	209
7	STRATEGIC CHOICE IN LINER CONTAINER SHIPPING	211
7.1	Introduction	212
7.2	Assets	214
7.2.1	Linehaul ships	215
7.2.2	Feeder ships	216
7.2.3	Containers	217
7.2.4	Terminals	218
7.2.5	Inland transport	220

	7.2.6	Value added activities	221
7.3		Operations	223
	7.3.1	Organisation structure	223
	7.3.2	Overseas representation	226
	7.3.3	Information systems	227
	7.3.4	Service network	229
	7.3.5	Trade agreements	230
	7.3.6	Operating agreements	231
7.4		Summary	233
8		CONCLUSIONS	236
	8.1	Introduction	237
	8.2	Constraints and limitations	237
	8.3	Strategic management issues	240
	8.4	Differences in management approach	242
	8.5	Global industry pressures on the organisation	245
	8.6	Strategic choice theoretical framework	247
	8.7	Directions for future research	249
		Bibliography	251
	APPENDIX A:	Interview programme	264
	APPENDIX B:	Questionnaire	265
	APPENDIX C:	Glossary of technical terms	268

List of Tables

Table 2.1	Key features of positivist and phenomenological paradigms
Table 2.2	Strengths and weaknesses of the positivist/quantitative paradigm
Table 2.3	Strengths and weaknesses of the phenomenological/qualitative paradigm
Table 2.4	Key features of phenomenological paradigm exhibited in this study
Table 2.5	Questions of reliability, validity and generalisability
Table 2.6	Interview schedule and purpose
Table 2.7	Differences between 'content analysis' and 'grounded theory'
Table 3.1	Trends in world exports (fob) 1977-1995
Table 3.2	World seaborne trade by value, 1980-1997
Table 3.3	Forecast of additional world container port throughput to 2005
Table 3.4	Breakdown of container traffic on East-West trades, 1998
Table 3.5	Leading 20 container service operators (September 1998) on the basis of number of vessels and total shipboard capacity (TEU)
Table 3.6	Post-Panamax ships on order, top 20 lines (September 1999)
Table 3.7	Main container shipping alliances, 1998
Table 3.8	Container shipping capacity supplied by commercial entity and by route
Table 3.9	Financial performance and key performance indicators of selected major liner shipping companies, 1998
Table 3.10	Liner shipping profitability by ocean freight service, 1997
Table 3.11	Nominal global carrier income, 1996-1998
Table 3.12	Carrier attributes required by shippers
Table 4.1	Criteria for analysing global integration and local responsiveness
Table 5.1	Sea-Land fleet and deployment on main East-West routes, 1997
Table 5.2	Sea-Land's main East-West services
Table 5.3	Evergreen fleet and deployment on main East-West routes, 1997
Table 5.4	Evergreen's main East-West services
Table 5.5	Sea-Land's container fleet (at September 1, 1995)
Table 5.6	Evergreen's container fleet (at September 1, 1995)
Table 5.7	Market shares of main East-West linehaul trades 1995
Table 5.8	Top 20 carriers according to liftings (in TEU) for 1997
Table 5.9	Key financial indicators in liner container shipping, 1991-1995
Table 5.10	Financial performance of Sea-Land and Evergreen, 1997-1998
Table 6.1	Global coordination differences between Sea-Land and Evergreen
Table 6.2	Global integration differences between Sea-Land and Evergreen
Table 6.3	Local responsiveness differences between Sea-Land and Evergreen

Table 6.4	Pressures for global coordination in the container shipping industry
Table 6.5	Pressures for global operational integration in the container shipping industry
Table 6.6	Pressures for local responsiveness in the container shipping industry
Table 7.1	Container shipping assets: Choices for global carriers
Table 7.2	Container shipping operations: Choices for global carriers

List of Figures

Figure 4.1	Porter's classification of 'generic' competitive strategies
Figure 4.2	The Value Chain
Figure 4.3	Competitive and strategic characteristics of multidomestic and global industries
Figure 5.1	Sea-Land organisation structure
Figure 5.2	Evergreen organisation structure
Figure 7.1	Strategic choice in the global container shipping industry

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Abstract

Container shipping is of immense importance to global industry, and one of the critical enablers of globalisation. Analysis of the global container shipping industry suggests the potential for significant economies of scope and scale, and hence low costs and high efficiency, both recognised benefits of a global strategy. However, the global activities of container shipping lines are subject to a series of *countervailing pressures*, in particular, state regulation, shipper power, and the constant threat of competition. In an industry where differentiation has been absent, or at best difficult to achieve, there exists a growing belief amongst industry leaders that competitive advantage can be secured through providing a higher level intermodal service with a global network. This project identifies these and other important strategic management issues relating to container shipping. It compares strategies adopted by industry leaders Sea-Land Service Inc. and Evergreen Line, two firms appearing to exhibit different modes of operation. Key differences in the strategies adopted by these lines' are identified. Through application of an established theoretical framework to help further analyse the strategies of these competitors, and aided by in-depth interviews with executives from each firm, it has been possible to identify specific organisational pressures associated with the conflicting needs for global operational integration of activities and for local responsiveness. The study has found that, in the global container shipping industry, competitors must implement strategies that facilitate a capability for both global integration and for local responsiveness. This means that firms participating in the global container shipping industry must be *multifocal*; they must seek to develop the capability to manage both sets of demands simultaneously. Nevertheless, it is evident that whilst each firm is subject to broadly similar pressures in respect of the needs for integration and responsiveness, they adopt rather different strategies in attempting to meet these needs. With Sea-Land there is clearly an *intermodal orientation*, with more emphasis placed on intermodal capabilities and landside activities than on maritime aspects. Conversely, Evergreen Line was found to have a predominantly *maritime orientation*, placing greater emphasis on ships and containers and rather less emphasis on landside activities.

These and other differences between carrier strategies relate to the series of strategic choices global liner shipping companies must make regarding the specific assets and operations necessary to provide a global container service. Using the grounded theory approach, a theoretical framework specific to the global container shipping industry has been developed that outlines these choices, illustrating the various options open to industry competitors. Entitled *Strategic Choice in Container Shipping*, the framework can be used as a teaching instrument to help explain industry complexity, and as an analytical tool to aid management decision-making and strategic planning.

CHAPTER 1

INTRODUCTION

1.1 Introduction

The scale of worldwide multinational activity today would be unthinkable without the benefits brought about by containerisation, and its impact on world trade (Dicken, 1998). Benefits resulting from containerisation include faster service, more extensive geographic coverage, greater scale economies, and lower transport costs. Alongside factors such as jet air travel, telecommunications, and the liberalisation of financial markets, containerisation can rightly be considered one of the most important enablers of industry globalisation.

Strategic management in liner shipping has significantly altered since containerisation was first introduced to many of the world's major trade routes in the 1960's and 1970's (Rinaldi, 1972; Lim, 1996). Liner shipping managers are nowadays forced to consider the needs of global customers, and this implies a need to offer a global service network, with all the added resource commitments this entails. Providing a sophisticated global container transportation service has resulted in new demands being placed on service providers, and this has forced new strategies to be developed.

Employing a phenomenological comparative case study research approach (Yin, 1984; Easterby-Smith et al., 1991), this study investigates and analyses strategic management in the global container shipping industry. Based on application of an existing theoretical framework (Prahalad & Doz, 1987), the study provides in-depth assessment of the organisational implications resulting from the conflicting needs for global operational integration and for local responsiveness.

Using the grounded theory method (Glaser & Strauss, 1967), theory is developed outlining a framework that demonstrates strategic choices industry participants can select from when deciding on their preferred modes of operation. The choices made will thereafter reflect the strategy a competitor employs in seeking to secure competitive advantage in the industry. The theoretical framework helps facilitate greater understanding of the industry. It

may also be employed by management to assist strategic planning, and can be used as a teaching tool.

1.2 Context of the research

Strategic management issues in liner shipping have fundamentally altered since the days of conventional shipping methods. Capital investment needs in terms of ships, terminals, and equipment are much greater, minimum efficient scale of operation is vast, and port and landside productivity has dramatically improved. Methods of cooperation between lines has altered, as have transport service networks, and the changing regulations liner shipping companies must consider in different parts of the world require constant monitoring. These and other influences will inevitably impact on the way in which a global organisation chooses to configure its resources in an effort to achieve competitive advantage.

A key issue for industry competitors also relates to the strategies of major customers, or shippers. Container liner operators must go where shippers want them to go, and it is shippers who are driving many of the changes in the industry (Cooper, 1993). Globalisation of industry is a key driver in this respect, forcing lines to provide more services, faster services, and extend their global geographic reach. Liner shipping managers must therefore be capable of implementing strategies, creating organisation structures, and developing capabilities which can best meet the needs of shippers, as well as generate competitive advantage.

It is the many pressures resulting from this dynamic business environment, and which are faced by global liner shipping organisations, coupled with corporate responses to such pressures, that this study has sought to identify and analyse further. This represents a significant challenge for the researcher. However, the study has benefited from collaboration with one of the world's largest container lines, Sea-Land Service Inc. This collaboration has facilitated access to senior managers in Europe and the United States.

1.3 Aims and objectives

The aim of the study is to investigate, and enhance, understanding of strategic management in the global container shipping industry. Corresponding with this aim the study has three objectives:

- ❑ To identify and analyse strategic management issues in the global container shipping industry;
- ❑ To compare and contrast different approaches to strategic management in the global container shipping industry;
- ❑ To identify and analyse organisational pressures facing competitors in the global container shipping industry.

These three objectives are clearly interrelated and, when combined, are considered sufficient to meet the overall aim of the work. For example, initial identification of strategic management issues relating to the industry in question is necessary to thereafter compare, and contrast, the different approaches to strategic management. Thereafter, by applying an appropriate theoretical framework (Prahalad & Doz, 1987) as a template to aid analysis (Yin, 1984), the study identifies and investigates key organisational and competitive pressures faced by global liner shipping companies, and illustrates corporate responses to such pressures.

The main contribution made by the thesis is the demonstration, predominantly through the use of qualitative data, that the Prahalad & Doz framework can be adapted and applied to the global container shipping industry in order to help understand how firms evolved distinct strategies despite competing in the same industry. In addition, the thesis develops, from the data collected, a new theoretical framework which sets out strategic choices facing competitors in container shipping.

1.4 Outline of the chapters

Aside from the introduction and conclusions sections, this thesis contains six main chapters. Chapter 2 provides the methodological outline of the work, and justification for the research methods adopted. This chapter also highlights potential alternative research approaches which could have been selected, and gives reasons for their rejection. The methodology chapter also provides a detailed explanation of sampling, data collection, and analytical techniques used. A further section discusses the limitations of the chosen case study, and in particular the difficulties associated with making generalisations to the whole sector from a small sample.

Chapter 3 offers a macro analysis of the global container shipping industry. The chapter considers both supply side and demand side issues. Supply side aspects considered include world container trade flows, the structure of the container shipping industry, and the nature of competition. Key demand side aspects are then evaluated, including analysis of shipper requirements through a review of previous surveys investigating shipper needs. Pressure for global shipper contracts is also assessed, as is the role and significance of Shippers' Councils.

Chapter 4 contains a literature review of globalisation theory from a strategic management perspective. This chapter considers the pressures forcing industry to globalise, the benefits and disadvantages of a global strategy, and issues related to economic regulation. Thereafter it assesses alternative global or multidomestic strategies that firms may adopt, and the resulting organisational implications.

Chapters 5 and 6 employ a comparative case study approach (Yin, 1984; Jankowicz, 1995) to identify and analyse contrasting strategies adopted in the industry, and to assess pressures (for global operational integration and for local responsiveness) faced by two leading global container operators, Sea-Land Service Inc. (the collaborating organisation) and Evergreen Marine Corporation.

Chapter 5 investigates each operator in terms of ships employed and routes serviced, container fleets and terminals, organisation structure, and respective

conference affiliation. This chapter also provides a review of the origins of each line, in addition to analysing respective market shares on the main East-West global trade lanes, and comparing company profitability.

Chapter 6 extends the analysis through investigation of conflicting pressures for global operational integration and for local responsiveness faced by Sea-Land and Evergreen. A theoretical framework (Prahalad & Doz, 1987) is employed as a template (Yin, 1984) to aid categorisation of data collected, and to facilitate analysis in a structured manner. Multiple methods of data collection are employed, including interviews with industry managers, accessing company reports, and sourcing industry press articles.

Chapter 7 presents a new theoretical framework, developed on the basis of findings from this study. The framework sets out strategic choices and resulting alternative modes of operation (Jankowicz, 1995) in the global container shipping industry. The framework builds on earlier findings identifying key strategic management issues and business environment pressures faced by global carriers. There are two main component parts to the framework, *assets* and *operations*. Under each heading a range of choices are provided, illustrating the different options from which a carrier may select in seeking to develop competitive advantage. Chapter 7 concludes by proposing potential practical applications of the theoretical framework as an analytical tool. Chapter 8 summarises the thesis and brings together conclusions from the work.

CHAPTER 2

RESEARCH METHODOLOGY

2.1 Introduction

This research methodology chapter contains six main sections, beginning with a review of different research approaches and research forms. Further sections emphasise and elaborate, within the context of this study, the differences between positivist and phenomenological traditions, and quantitative and qualitative research approaches. Thereafter, the chapter outlines choice of survey method selected, sampling issues, data collection and analytical techniques used, and limitations of the research.

Throughout the chapter, reference is made to the industry/firms under examination, and in particular to the way in which the research methodology has been applied. In addition, justification is provided for the particular research approach adopted, with explanation given for rejection of other research methods.

2.2 Research approaches

2.2.1 Forms of research

Research studies can take a number of forms, each depending to a large degree on the type of research, and the objectives of the work involved. Generally, however, there are three main recognised forms of research:

- *Pure research*: in which the research is intended to lead to theoretical developments and may not have any practical implications. Examples of pure research include:
 - ◆ research leading to discovery of a totally new idea, or explanation;
 - ◆ research leading to invention of a new technique or method, and;
 - ◆ research resulting in reflection, for instance examination of an existing theory, technique or group of ideas.

- ❑ *Applied research*: where research is intended to lead to the solution of specific problems. In this form of research the idea is to explain ‘why’ a situation or event occurs (Phillips & Pugh, 1987);
- ❑ *Action research*: this implies that in order to understand something well you should try to change it. For example, such research could involve implementation of a trial scheme of some kind in an organisation, using the latter as a laboratory.

(Based on Easterby-Smith et al, 1991: 6-8)

This study demonstrates elements of both pure and applied research forms. It is pure research in the sense that the study offers reflection through examination of an existing theory; and it is applied in the sense that the research explains how and why firms pursue different strategies in endeavouring to provide a global container shipping service.

2.2.2 Quantitative and qualitative research

Among the different research methods employed in the social sciences, most debate has centred on the issue of whether to employ a quantitative or qualitative methodology. Bryman (1988) points out that it was the growing disillusionment with quantitative (i.e. statistical or scientific) research, which resulted in greater interest in qualitative methods.

Whether quantitative or qualitative, each approach encompasses more than simply data gathering techniques, for instance:

“When we speak of ‘quantitative’ or ‘qualitative’ methodologies, we are in the final analysis speaking of an interrelated set of assumptions about the social world which are philosophical, ideological, and epistemological.”

(Rist, 1977: 62).

One of the intellectual precursors of the qualitative research approach is considered to be Weber's idea of *verstehen*, which means 'to understand' (Filstead, 1970: 4). At the forefront of this view, sociology was deemed to entail:

"....a science which attempts the interpretative understanding of social action in order to arrive at a causal explanation of its course and effects."

(Weber, 1947: 90).

The two main methods of qualitative data collection are participant observation or ethnography, and qualitative, depth or unstructured interviewing (Allan, 1991). One aspect of the contrast between qualitative and quantitative research methods concerns the mode of data analysis used. Quantitative approaches assume interval or ordinal data which are amenable to statistical formulation, whilst data from qualitative methods typically require a different mode of exposition. A qualitative approach may nonetheless yield nominal or ordinal data which can be analysed statistically. However, differences can go further than this, reflecting different theoretical underpinnings and views as to what actually counts as *valid* data (Bryman, 1988).

A key feature of qualitative research methods is that satisfactory explanations of social activities require a detailed appreciation of the perspectives, culture and 'world-views' of the actors involved (Allan, 1991). This will inevitably require a more in-depth examination of phenomena. As Burgess (1984) notes, prominence needs to be given to:

".....understanding the actions of participants on the basis of their active experience of the world and the ways in which their actions arise from and reflect back on experience."

(Burgess, 1984:3)

The use of participant interviews in gathering data that helps facilitate understanding of phenomena represents an important element in many qualitative studies (Jankowicz, 1995). Participant interviews form a key part of primary data collection in this study.

2.2.3 Positivism and phenomenology

It is argued that there are two philosophical positions, or paradigms, from which research methods are derived, these being phenomenology and positivism (Easterby-Smith et al, 1991; Hussey & Hussey, 1997). However, there does appear to be some blurring between the two paradigms. The term paradigm in this context refers to:

“.....the progress of scientific practice based on people’s philosophies and assumptions about the world and the nature of knowledge.”

(Hussey & Hussey, 1997: 47)

An extensive array of assumptions and methodological implications can be associated with each of these positions, although Creswell (1994) merely refers to the positivist paradigm as quantitative, and to the phenomenological paradigm as qualitative. However, even extremists do not hold consistently to one position or the other, and a more enlightened approach may be to combine methods drawn from both traditions, as is the case with this study. Table 2.1 outlines key features of the positivist and phenomenological paradigms.

Reflecting the key features noted in Table 2.1, it is evident that this study conforms rather more to the phenomenological than to the positivist paradigm. The basic starting point (in this study) is that the ‘world’ in question (i.e. the global container shipping industry) is socially constructed and subjective. An attempt is therefore made to focus on understanding events, and to do so by developing ideas through induction from data collected. The research approach employs multiple methods, with a necessary focus on small samples investigated in depth. This also reflects the phenomenological paradigm.

Table 2.1 Key features of positivist and phenomenological paradigms

	Positivist paradigm	Phenomenological paradigm
Basic beliefs:	The world is external and objective	The world is socially constructed and subjective
	Observer is independent	Observer is part of what observed
	Science is value-free	Science is driven by human interest
Researcher should:	Focus on facts	Focus on meanings
	Look for causality and fundamental laws	Try to understand what is happening
	Reduce phenomena to simplest elements	Look at the totality of each situation
	Formulate hypotheses and then test them	Develop ideas through induction from data
Preferred methods include:	Operationalising concepts so that they can be measured	Using multiple methods to establish different views of phenomena
	Taking large samples	Small samples investigated in depth over time

Source: Easterby-Smith et al (1991), p. 27

Positivists, conversely, are more likely to be concerned with ensuring that any concepts they use can be operationalised; that is, described or evaluated in such a way that they can be measured. In this respect, large samples help to reduce phenomena under examination into their simplest parts; the focus is on objective facts and formulation of hypotheses, with analysis tending to look for associations or causality (Hussey & Hussey, 1997).

Conversely, phenomenologists examine small samples, using various research methods to obtain different perceptions of phenomena. A phenomenological analysis will seek to understand, as in the qualitative approach noted above, what is happening in a situation, as well as search for patterns that may be repeated in other similar situations (Creswell, 1994). The last point is important

in the context of this research, as here a theoretical framework¹ is developed that can help illustrate such patterns.

The main reason it is better to use the term positivist rather than quantitative, and phenomenological rather than qualitative, for the paradigms, is because it is possible for a positivist paradigm to produce qualitative data and vice versa (Hussey & Hussey, 1997). It nevertheless appears to be more usual to associate a positivist paradigm with measurement.

Yet there are certainly also aspects of the positivist paradigm in this study. Here, an existing theoretical framework (Prahalad & Doz, 1987) has been used to aid examination and subsequent analyses of environmental pressures facing two firms competing in the global container shipping industry. Use of an existing theory in this way corresponds more towards the positivist paradigm. However, a phenomenological approach is also employed, whereby a theoretical framework is constructed to further explain phenomena under examination, and to more adequately describe the different patterns emerging from the data.

2.2.4 Positivist tradition

With positivists, it is assumed that the world exists externally, and that it should be measured through objective methods, rather than through sensation or reflection. Positivists therefore assume that real knowledge can only be based on observed fact. In essence, major scientific advances, according to positivists:

“.....are not produced by a logical and rational application of scientific method: they result from independent and creative thinking which goes outside the boundaries of existing ideas.”

(Easterby-Smith et al, 1991: 24)

In practice, both the positivist and phenomenological approaches exhibit a number of strengths and weaknesses. The main strengths and weaknesses of the positivist/quantitative paradigm are shown in Table 2.2.

¹ The term ‘theory’ means ‘an explanation or system of anything’, whilst ‘framework’ means ‘a skeleton or outline of anything’ (Chambers English Dictionary).

Table 2.2 Strengths and weaknesses of the positivist/quantitative paradigm

Strengths	Weaknesses
<ul style="list-style-type: none"> <input type="checkbox"/> Provides wide coverage of a range of situations <input type="checkbox"/> Can be fast and economical <input type="checkbox"/> May be of relevance to policymakers when statistics are aggregated from large samples <input type="checkbox"/> Permits statistical verification 	<ul style="list-style-type: none"> <input type="checkbox"/> Methods tend to be inflexible and artificial <input type="checkbox"/> Not effective in understanding processes or the significance people attach to actions <input type="checkbox"/> Not very helpful in generating theories (Legge, 1984)

Source: Based on Easterby-Smith et al., 1991; 32)

A rather more dominant positivist/quantitative approach was not considered appropriate in this research study for a number of reasons. First, in relation to the main aim of the research – *to investigate and improve understanding of strategic management in the global container shipping industry* - it was recognised that an issue such as this cannot be answered by measurement alone. It requires more in-depth examination of the key activities, competitive strategies, and choices available to and adopted by competitors. In other words, the type of information required was not considered amenable to statistical analysis.

Second, the form of questions asked of interviewees during this study are not so straightforward that they could be sent (or more importantly answered) by postal questionnaire. The in-depth questionnaire used (with a necessary focus on management) generally demanded interviews of over two hours duration; inevitably, a postal questionnaire of this nature would have resulted in a very low response rate, more especially as it is directed at management whose time tends to be limited.

Furthermore, in a descriptive study, the use of quantitative methods may allow for rather limited objectivity, leading to reductionism tendencies (Hussey &

Hussey, 1997). This means that the richness of the data and its contextual implications may be lost, thus contributing to a narrower and less 'real' interpretation of the phenomena.

2.2.5 Phenomenological tradition

Phenomenologists assume, therefore, that the world and reality are not objective and exterior, but are socially constructed. In essence, the main task in phenomenology:

".....is not to gather facts and measure (quantitatively) how certain patterns occur. The task is to appreciate the different constructions and meanings people place upon their experience....and to understand and explain why people have different experiences rather than search for external causes and fundamental laws to explain their behaviour."

(Easterby-Smith et al, 1991: 24)

Phenomenologism assumes that human action arises from whatever sense people make of a given situation, as opposed to any direct response from, for example, external stimuli. The main strengths and weaknesses of the phenomenological (qualitative) paradigm are shown in Table 2.3.

Taking the key features of the positivist and phenomenological paradigms noted above, the main emphasis of this research study is described in Table 2.4. The dominant, but not the sole approach taken in the study, is phenomenological. The basic assumption, therefore, is that the 'world' under examination is socially constructed, and is driven by human interest.

The study has therefore sought to identify meanings people attribute to certain phenomena. The aim is to understand what is happening in regard to *how* firms manage, in a strategic sense, a global container shipping service, and to identify differences in strategic approach/choices. Resulting from this analysis, the study has generated (or 'ground') theory through construction of an industry specific theoretical framework by developing ideas through induction of data. During

this process, multiple methods are employed to establish different views of phenomena, with a focus on small samples, investigated in depth, and over a considerable period of time.

Table 2.3 Strengths and weaknesses of the phenomenological/qualitative paradigm

Strengths	Weaknesses
<ul style="list-style-type: none">❑ Ability to look at change processes over time❑ To understand people's meanings❑ To adjust to new issues and ideas as they emerge❑ To contribute to the evolution of new theories❑ Provides a way of gathering data which is seen as natural rather than artificial❑ Takes a holistic view❑ Accepts involvement of the researcher	<ul style="list-style-type: none">❑ Data collection can take up a great deal of time and resources❑ Analysis and interpretation of data may be very difficult❑ Qualitative studies often feel very untidy because it is harder to control their pace, progress and end-points❑ People (especially policy makers) may give low credibility to studies based on a phenomenological approach

Source: Based on Easterby-Smith et al., 1991; 32)

Table 2.4 Key features of phenomenological paradigm exhibited in this study

Basic beliefs:	The world is socially constructed and subjective
	Science is driven by human interests
Researcher has:	Focused on meanings
	Tried to understand what is happening
	Looked at totality of each situation
Research methods:	Developed ideas through induction from data
	Multiple methods to establish different views of phenomena
	Small samples investigated in depth and over time

Source: Adapted from Easterby-Smith et al (1991), p. 27

2.2.6 Issues in qualitative research

As the literature suggests, it can be quite difficult to distinguish between phenomenological and qualitative research (Creswell, 1994). However, the essence of the qualitative approach is well expressed in Evered and Lewis's (1981) categorisation of it as "*inquiry from the inside*" rather than "*inquiry from the outside*" (cited in Bryman, 1988a:3).

According to Allan (1991), the way the research problem is formulated, and the research agenda specified, actually makes it increasingly obvious which approach is most suitable in any given instance. For example, considering the way in which ethnicity and gender affect children's educational performance are questions best answered using quantitative methods which allow for large, representative samples. On the other hand, if the objective was to establish *how* and *why* it is that children from certain backgrounds do less well than others, a qualitative approach is more appropriate. Perhaps at its most basic level, qualitative research is about asking the question "*what is going on here?*" (Rist, 1977: 161).

There are, however, a number of aspects specific to qualitative research (Allan, 1991).

- First, there is a need to rely on different research methods, such as observation, depth interviews, records and reports. Using different methods may also offer some possibility for triangulation - that is, using different methods in combination to compensate for the biases of any one (Denzin, 1970);
- Second, in certain instances, observation or detailed questioning of different actors over time may be the only way in which adequate data can be collected. This factor was important during this research given that the study was undertaken on a part-time basis, and interviewing of executives responsible for deciding and implementing corporate strategy took place in different parts of the world, and;

- Third, when the unit of analysis may not be an individual, but a social organisation, a holistic approach to the organisation is required which makes using standard quantitative techniques in isolation less suitable.

Combined, it is argued that these three reasons offer sufficient justification for the phenomenological/qualitative approach adopted in this study, as opposed to a positivist/quantitative approach.

The literature further suggests that qualitative researchers invariably seek to go beyond pure description of events, and this means there tends to be a substantial attention to detail in such research (Burgess, 1983). For instance, Burgess's (1983) ethnographic study of a comprehensive school revealed in great detail such topics as - the physical and social structure of the school, the curriculum, patterns of relationships among the teachers, and the headmaster's conception of the school. One of the reasons given for such descriptive detail was to allow a backdrop whereby events and situations can be viewed within a social context (Burgess, 1983: 238). The basic message qualitative researchers convey is that whatever the sphere in which data are being collected, we can understand events only when they are situated in the wider social and historical context (Bryman, 1988).

This study contains just such a 'backdrop', in that the industry in question is considered to begin with (Chapter 3), followed by a more specific appraisal of the history and development (Chapter 5) and then in-depth analysis (Chapter 6) of the subject firms themselves. Indeed, such an approach is necessary as:

".....qualitative research exhibits a preference for contextualism in its commitment to understanding events, behaviour, etc. in their context. It is almost inseparable from another theme in qualitative research, namely holism which entails an undertaking to examine social entities - schools, tribes, firms, slums, delinquent groups, communities, or whatever - as wholes to be explicated and understood in their entirety."

(Bryman, 1988: 64)

2.3 Choice of survey method

2.3.1 Rationale

In large part corresponding with the phenomenological philosophy, this research employs a comparative case study methodological approach, in which issues are explored as they affect two firms in the same industry. Irrespective of which research approach is preferred, Jankowicz (1995) defines research method as:

“....a systematic and orderly approach taken towards the collection of data so that information can be obtained from those data.”

(Jankowicz, 1995: 172)

Organisations chosen for a comparative case study must ideally represent different positions or stances, regardless of the relative frequencies of those stances in the population (Yin, 1984; Easterby-Smith et al, 1991). This is the approach taken here, in that the two firms selected for further examination, Evergreen and Sea-Land, are considered to be representative of the two main modes of operation (see section 2.4.2) typically employed in liner container shipping (Sletmo & Williams, 1981; Kim, 1987; Baird & Lindsay, 1994; Lim, 1996).

For example, key differences identified in relation to the main strategic approach of both lines are as follows:

- Sea-Land is a member of relevant liner shipping conferences or rate making agreements, whereas Evergreen operates independently from such agreements, and;
- Sea-Land operates within consortia or alliances, whereas Evergreen prefers to function independently.

Doctoral research work is required to ultimately produce theoretical outcomes and suggested ways to do this are:

- To replicate known studies, with one or two variables being changed (e.g. country or industry); or
- To look at a practical problem from two different theoretical perspectives.

(Easterby-Smith et al.,1991: 9)

In this study, first an established theoretical framework (Prahalad & Doz, 1987) is used to help identify and analyse organisational pressures for global operational integration and for local responsiveness facing management of container shipping lines (see Table 4.1 and APPENDIX B). Second, as the two firms under examination appear to adopt different modes of operation enabling each of them to compete in the same global industry, this permits the researcher to assess the problem/issue from two different theoretical perspectives.

The literature suggests it is through such contrasts that new ideas and insights are most easily created (Yin, 1984). In addition, the chances of success are increased when one incorporates both pure and applied elements in the research (Jankowicz, 1995), as is the case with this study.

The methodological approach employed here is thus a qualitative case study analysis, with a necessary focus on micro aspects. Not, however, at the exclusion of macro issues: the research is enhanced through macro analysis of the industry in question (see Chapter 3), via investigation of relevant secondary data, supported by primary data collected.

In terms of a theoretical rationale underpinning a qualitative approach, it has been argued that:

“..... it is through micro-social approaches that we will learn most about the macro-order, for it is these approaches which, through their unashamed

empiricism, afford us a glimpse of the reality about which we speak. Certainly, we will not get a grasp of whatever is the whole of the matter by a microscopic recording of face-to-face interaction. However, it may be enough to begin with if we can - for the first time - hear the macro-order tick."

(Knorr-Cetina, 1981: 41,42)

It can therefore be argued that small-scale research studies are important in attempting to more fully aid understand of the nature and structure of larger orders. Indeed:

"It is within micro-situations that we find both the glue and the transforming energies of these structures. Any other view of them remains metaphorical."

(Collins, 1981: 105)

And it follows that:

"The emphasis is therefore on examining micro results in order to identify processes which construct difference and which may inform macro level conceptualisations."

(Callaghan, 1997: 27)

In this study, the subsequent development of a theoretical framework outlining the principal strategic management choices facing competitors in liner container shipping, reflects such a macro level conceptualisation.

2.3.2 Criticisms of qualitative research

A number of criticisms have been levelled at qualitative research methods and the researcher needs to be aware of such criticisms, and counter views, when deciding the best approach to take. For instance, a common criticism relates to such research being impressionistic and anecdotal (Bryman, 1988). However, Allan (1991) suggests it is actually good practice in the early phase of

qualitative research to be impressionistic. This does not mean that ‘anything goes’. Rather, the researcher should keep an open mind and reflect upon processes and actions being observed or discussed. Simultaneously, the collection of data and testing of ideas need to become as systematic as possible, thereby ensuring a sufficient degree of analytical rigour.

Empirical investigation should ideally be capable of being replicated by others so that the results of a study can be confirmed or refuted. However, the difficulty that qualitative methods pose is that the precise procedures used to achieve the data cannot be repeated in all their detail. Indeed, it has been argued that the point of qualitative methods is their flexibility: the fact that the researcher can develop themes with respondents as they emerge (Allan, 1991).

There are, of course, many difficulties with replication in any event. First, changes can obviously occur in a community, organisation, or whatever in the time between first and later studies (Lewis, 1951). There is also the strong possibility that the researcher’s own assumptions affect what she or he perceives, records and reports (Freeman, 1984), although much will depend on the nature of the interview (e.g. whether structured or not).

Furthermore, there is what Measor (1985) refers to as ‘rambling’, where an interviewee will move away from the designated area of discussion. Rambling is nonetheless important, in that it may provide additional data to the researcher, and data which is of importance to the interviewee. This was certainly the case during this study, with interviewees offering additional unsolicited information of value on a number of occasions.

However, such criticisms of qualitative approaches do not undermine the case for using them. If anything, they highlight the need for replication in order to test and develop the analyses generated in qualitative studies. As Allan (1991) points out:

“Crucially, those who favour qualitative approaches would accept that the perspective a researcher brings to the research does influence the resultant ‘findings’, but that the flexibility of the methods, their time-span and the quality

of the data collected allows for far greater reflexivity about the theoretical and conceptual assumptions being made than do those methods which produce apparently more reliable, highly structured data."

(Allan, 1991:182)

Given that this research was undertaken as a part-time doctoral study, the lengthy time span involved has allowed for greater reflection than would have been possible with study of similar phenomena demanding much earlier completion. This, it is argued, has permitted a far more comprehensive and detailed study to be achieved.

Easterby-Smith et al (1991) view the phenomenological approach in a similar way to that of grounded theory, as proposed by Glaser & Strauss (1967). With grounded theory, Glaser & Strauss (1967) considered the key task of the researcher was to develop theory through comparative method; essentially, this means looking at the same event or process in different settings. Glaser & Strauss in turn proposed the following two criteria for evaluating the quality of a theory:

- ❑ It should be sufficiently analytic to enable some generalisation to take place, and;
- ❑ It should be possible for people to relate the theory to their own experiences.

The latter part of this study has involved such development of theory (i.e. theory in part designed for use as an analytical tool; such tools or 'frameworks' commonly used in the study of strategic management), in this instance outlining strategic choices faced by management of container shipping lines. Theory developed in this study may be applied as an analytical framework, and this conforms to the first evaluation criterion. In addition, following further primary research carried out during the study (i.e. interviews with carrier management), industry professionals can readily relate the theory to their own experiences, thus conforming to the second evaluation criterion.

In grounded theory, the theory, or theoretical framework, is developed by the researcher alternating between inductive and deductive thought (Hussey & Hussey, 1997). In this process, the researcher first inductively gains information which is apparent in the data collected. Next, a deductive approach is used and this allows the researcher to move away from the data and think rationally about any missing information, forming conclusions based on logic. When conclusions have been drawn, the researcher reverts to an inductive approach, and tests these tentative hypotheses with existing or new data. Through this inductive/deductive approach, the deducted suggestions can be supported, refuted or modified. (A more detailed discussion of the grounded theory approach in the context of this study is given in section 2.6.1)

The contrasting view would be that one should start with a theory or hypothesis about the nature of the world and then seek data that will confirm or refute the theory. A major benefit of the latter approach is initial clarity about what is to be investigated, and clarity of method means that it is easier for another researcher to replicate the study. Starting with a theoretical framework is nevertheless considered to be less important in a phenomenological study than in a positivistic study (Hussey & Hussey, 1997).

This study is a mix of both, in that the researcher develops or constructs a theoretical framework, but first applies an existing theoretical framework (*Integration and Responsiveness in Global Industries* – Prahalad & Doz, 1987) to aid data collection and analysis, and to provide categories from which data can be analysed easily and effectively, and generalisations made.

In this study such an approach is considered to be complementary. First, data has been analysed in a structured manner, using categories (e.g. contained in the *Integration-Responsiveness Framework*) to facilitate the process. Thereafter, through the inductive/deductive process, information is gradually drawn from the data to form a new and industry specific theoretical framework (*Strategic Choice in the Global Container Shipping industry*) that fits phenomena under examination.

2.3.3 Research design

It is important to ensure that research results are valid and reliable. If theories are generated, then it is also important that they will be applicable in other settings. Achieving this depends on the appropriateness of the research design. Three criteria of research design have been proposed, namely:

- ❑ Personal preference of the researcher;
- ❑ Aims and context of the research to be carried out;
- ❑ Will the research stand up to outside scrutiny?

(Easterby-Smith, 1991: 40)

In this study, the researcher has gathered primary data through interviewing managers working in the industry in question. This has brought the researcher into close contact with events and views, from the perspective of senior managers (i.e. key decision-makers), and helped to raise awareness of and illuminate other potential areas of interest worthy of examination. Further, this also fits with the phenomenological approach adopted, which in turn corresponds with the objective of the research, and the nature of the research question.

Whether or not the findings stand up to outside scrutiny depends to some extent on the accuracy of the data collected and analysed, and this is an issue facing all forms of research. In this study, however, triangulation has helped to confirm and refute a number of issues, thus aiding reliability. Validity and reliability tend to have different meanings that largely depend on the philosophical viewpoint adopted. Table 2.5 summarises some of these meanings in relation to the phenomenological viewpoint.

Obtaining data through in-depth face to face interviews, added to use of triangulation methods (e.g. confirming/refuting data through reference to

industry publications, academic articles, and company documentation) to minimise bias and confirm statements, has aided validity. Checking statements made with other informants, in addition to re-checking with interviewees, has also helped to maintain reliability. With regard to generalisability of ideas and theory generated, it is argued that by investigating examples of both main modes of operation in the industry, ideas and theories generated may also be applicable to other industry participants.

Table 2.5 Questions of reliability, validity and generalisability

Phenomenological viewpoint	
Validity	Has the researcher gained full access to the knowledge and meanings of informants?
Reliability	Will similar observations be made by different researchers on different occasions?
Generalisability	How likely is it that ideas and theories generated in one setting will also apply in other settings?

Source: Adapted from Easterby-Smith (1991), p. 41

2.3.4 Case study research

In this study, an explanatory case study approach is used in which existing theory is applied to help understand and explain what is happening (Scapens, 1990). The literature review of globalisation theory from a strategic management perspective (see Chapter 4), highlights the main benefits to be derived from a global strategy, as well as some of the barriers to globalisation.

The study has sought to investigate these issues further in the specific context of the global container shipping industry. A theoretical framework has been applied in order to effectively categorise and analyse data collected. Using a case study approach, the framework employed has facilitated examination and analysis of specific organisational pressures, pressures for global integration and for local responsiveness, facing firms competing in a global industry (Prahalad & Doz, 1987).

Eisenhardt (1989) refers to the case study as:

".....a research study which focuses on understanding the dynamics present within a single setting."

(Eisenhardt, 1989: 534)

Mitchell (1983) goes a little further, characterising a case study as:

"....a detailed examination of an event (or series of related events) which the analyst believes exhibits (or exhibit) the operation of some identified general theoretical principle..."

(Mitchell, 1983: 192)

A solution to the question of generalisability (and hence representation) is to study more than one case (Skolnick, 1966). This is the approach taken in this study in which, although **the main focus is directed towards one (collaborating) organisation**, sufficient data was collected on a competing firm in order to compare, contrast, and analyse differences (and similarities) relating to both firms.

A unit case (study) may be a person, a small group, a community, an event or an episode (Platt, 1988). Very little attention has been given in the literature as to how cases are chosen, except in the suggestion that a series of related case studies, each of which looks at a different set of conditions, can be useful in building theory (Eckstein, 1975). There seems to be an agreed definition of a case as a 'bounded' system, with an understanding that it will be at the very least a single case studied intensively (Simons, 1980). With a view such as this, non-academics and practitioners are arguably less interested in the general propositions, than in the cases on which they have to act. Validity, too, is seen as residing in the nature of the direct experience (Platt, 1988). The emphasis, therefore, is on 'understanding' and 'tacit knowledge' rather than formal method

and explicit theorising. Moreover, the case study method is holistic and examines interaction between many variables.

Logically following on from this, Runyan (1982) defines case study method as:

"....the presentation and interpretation of detailed information about a single subject, whether an event, a culture, or...an individual life."

(Runyan, 1982: 121)

However, Runyan's real focus was on individual persons, and, according to Platt (1988) his criteria for a good case study are skewed towards insight, empathy and the rhetorical virtues rather than 'explanation'. By contrast, Yin (1984) considers case studies ideal for analysis of organisational processes, defining a case study as:

"...an empirical inquiry that: - investigates a contemporary phenomenon within its real-life context; when - the boundaries between phenomenon and context are not clearly evident; and in which - multiple sources of evidence are used."

(Yin, 1984: 23)

This definition seems to suggest, at least as far as organisational research is concerned, a need for in-depth inquiry 'within' the subject area. Further, it is distinguishable from other approaches such as a history, experiment or survey. The additional value of a case study is that it may suggest hypotheses or interpretations which facilitate direction towards future (perhaps quantitative) investigations.

Inevitably, however, the appropriateness of any research approach:

"...derives from the nature of the social phenomena to be explored."

(Morgan & Smircich, 1980: 491)

One criticism of qualitative case studies is that they are not always representative, but as Mitchell (1983) and Yin (1984) argue, this is based on a misunderstanding of the nature of case study analysis. As Eckstein (1975) points out, a qualitative case study research method can be:

“....deliberately used to stimulate the imagination towards discerning important general problems and possible theoretical solutions.....”

(Eckstein, 1975: 104, from Mitchell, 1983: 196)

While it has been assumed (albeit rather narrowly) that generalising theory is the only worthwhile goal of a case study (e.g. Stake, 1980), it is also evident that a case study is an ideal source of description about a particular case seen as inherently interesting in its own right. Nevertheless, the question remains - how representative are the findings from a study of a particular firm, industrial sector, or whatever (Woods, 1979; Ball, 1981; Burgess, 1983)?

A solution to this dilemma is obviously to study more than one case. Skolnick (1966), for example, conducted the bulk of his participant observation of police officers in one US city and, **for the sake of broad comparison**, two weeks were also spent in another US city of comparable size, non-white population, industry and commerce. This extra case allowed Skolnick to place his observations in perspective, and to develop a number of contrasts between the two police forces. A similar approach has been adopted in this study, in which a greater number of interviews were conducted with managers from the collaborating organisation, than with managers from the comparison organisation.

Powell's (1985) study contrasted two publishing houses that adopted different approaches to the process of publishing. Powell proposed that if the cases studied are extremes, it suggests more confident coverage of the whole field, but this also raises the problem that extremes could have special characteristics. The argument may however be more persuasive where cases are drawn from 'varied settings' (Platt, 1988).

The approach taken here is similar to Powell's (1985) study in that two firms from the same industry (i.e. Sea-Land and Evergreen Line), each appearing to adopt 'contrasting approaches' in the way they meet the needs of customers, here described as 'contrasting modes of operation' (Yankowicz, 1995), have been selected for further examination.

2.4 Sampling frame/method

2.4.1 Research design

A characteristic of phenomenological studies is that research questions often evolve during the process of the research (Hussey & Hussey, 1997). In some phenomenological studies the research question may even take the form of a *grand tour* question (Werner & Schoepfle, 1987), i.e. a single research question posed in its most general form. The benefits of this are:

- The researcher does not block off any other potential lines of enquiry; and
- The aim is not to set a question which might restrict enquiries.

The aim posed for this study – *To investigate and improve understanding of strategic management in the global container shipping industry* - corresponds to some extent with the notion of a *grand tour* question. Nevertheless, an appropriate design is still necessary, primarily because different kinds of issues logically demand different kinds of data-gathering arrangements.

The choice of design approach in this study involves selection of companies practising forms of trade which represent examples of what appear to be the main modes of operation adopted by industry participants; this represents a design decision which involves *contrasting modes of operation* (Jankowicz, 1995: 154). The study therefore involves examining contrasting modes of operation in what is a descriptive, analytic and explanatory project.

2.4.2 Sampling

A comparative case study analysis is employed here to help identify and explore similarities and differences, and to identify common patterns. However, this still leaves the decision relating to which subjects to select for study, in other words, the sample. Sampling can be defined as:

“.....the deliberate choice of a number of people, the sample, who are to provide you with data from which you will draw conclusions about some larger group, the population, whom these people represent.”

(Jankowicz, 1991: 154)

From the sample one must first establish a sampling frame (i.e. all the population from which the sampling units are drawn). This implies the researcher needs to know:

- ❑ How many people/organisations are in the population; and
- ❑ How this total is made up from people/organisations falling into various subgroups in which the researcher may be interested.

The total population of firms offering global container services amounts to approximately twenty companies (as identified in Chapter 3), which means the sample chosen is equivalent to 10 per cent of the population (i.e. 10 per cent of firms, not capacity). In this sense, it is important to ensure the sample is not biased, and is representative of the population from which it is drawn.

As it would be impractical to undertake an in-depth qualitative study of this type into all global shipping lines, a more realistic approach was to identify firms which demonstrated aspects of strategic management that represented examples of the principal modes of operation adopted in the industry, and then to analyse these firms in more detail (Kennedy, 1979).

Sea-Land, the collaborating organisation, suggested at the beginning of the

study the presence of two quite different modes of operation adopted by industry participants. Such a view also corresponded with research findings of various writers on the containerisation phenomenon (e.g. Sletmo & Williams, 1981; Kim, 1987; Lim, 1996). These writers cite what might be described as 'establishment lines', companies that had been in existence for many years, are members of liner conferences, and generally worked together with other 'establishment' lines within strategic alliances. Sea-Land gave, as an example of an establishment line, the Peninsular & Oriental Steamship Company (P&O). Sea-Land also believed its own mode of operation to be somewhat similar to P&O and other establishment lines given its commitment to liner conferences and to strategic alliances with competitors (this notwithstanding the fact that the former had itself only been in existence since the early 1960's).

Then there were the 'independents', lines with relatively recent histories, which tended to be non-conference 'outsiders', and who generally preferred not to enter into strategic alliances with competing carriers. Sea-Land gave as an example of an independent line Evergreen Marine Corporation, based in Taipei, Taiwan.

In this sense, it is argued that an in-depth study of two firms (i.e. Sea-Land and Evergreen), each representing examples of the two main modes of operation adopted by competitors in the industry, will help identify patterns which may be repeated in other similar situations (Hussey & Hussey, 1997).

In addition to the decision concerning the sample of firms, the researcher also needed to identify people who were to be selected for interview within each firm. In this study, a purposive sampling strategy has been employed (Jankowicz, 1995). This involved choosing people whose views are relevant to an issue either because the researcher made a judgement, or the collaborator persuaded the researcher that their views were particularly worth obtaining and typified important varieties of viewpoint. The study has also employed what is termed a key informant technique (Temblay, 1982), whereby people with specialised knowledge about the issue in question are selected for interview. A limitation of the purposive sampling method, however, may be that the

researcher is never quite sure whether some people are ‘typical’, more especially when some part of the organisation may be undergoing changes (Jankowicz, 1995).

The interview sample size depended to some extent on the kind of questions to be asked, and the form of sampling adopted. In purposive sampling, the sample size is determined by the researchers feeling that all or sufficient numbers of relevant people have been approached (Jankowicz, 1995).

Information concerning the interview programme is provided in Table 2.6 and in APPENDIX A. In total, 25 interviews were completed, details of which are set out in Table 2.6 below. The first 4 interviews held with managers of the collaborating organisation (Sea-Land) each involved discussions concerning the firm’s agreement to collaborate with the research. They were largely used to identify key strategic management issues facing industry competitors, and to check the relevance and appropriateness of the Prahalad & Doz framework for application in research of the container shipping industry (this framework was subsequently used as the basis for the questionnaire).

After designing the questionnaire (see APPENDIX B), based on the Prahalad & Doz framework headings, with questions set to fit issues relevant to the container shipping industry, interviews were arranged with the collaborating organisation (Sea-Land), and with the comparison organisation (Evergreen Line). A total of 8 interviews with Sea-Land and 4 interviews with Evergreen Line were conducted using the questionnaire designed to establish, and compare, organisational pressures for global operational integration and for local responsiveness.

Finally, a further 9 interviews were conducted with Sea-Land management at its global headquarters in North Carolina. The purpose of these later interviews was:

- To confirm/refute and refine findings from earlier interviews;
- To gather new data, and;

- ❑ To establish the accuracy and relevance of the *strategic choice* theoretical framework developed during the study.

Table 2.6 Interview schedule and purpose

Year	Purpose of interview	Organisation	Number of interviews
1993-94	<ul style="list-style-type: none">❑ Confirm industrial collaboration agreement❑ Identifying key industry and strategic management issues❑ Agree research methodology❑ Check appropriateness of Prahalad & Doz framework	Sea-Land	4
1994	<ul style="list-style-type: none">❑ Undertake interviews using questionnaire based on Prahalad & Doz framework to assess pressures for global integration/local responsiveness	Sea-Land	8
1994	<ul style="list-style-type: none">❑ Undertake interviews using questionnaire based on Prahalad & Doz framework to assess pressures for global integration/local responsiveness	Evergreen	4
1996	<ul style="list-style-type: none">❑ Undertake interviews to check and refine findings from interview programme/gather new data❑ Undertake interviews to confirm relevance of Strategic Choice theoretical framework	Sea-Land	9

Whatever the unit of analysis, it will still be necessary to understand events leading up to the present (Hussey & Hussey, 1997). Hence this study contains one chapter (Chapter 3) relating to the global container shipping industry in general, and a further chapter (Chapter 5) which provides a necessary focus on the history and development of the two firms under examination. Collection of this data, and subsequent writing up of these two, mainly but not exclusively

descriptive (i.e. 'scene setting') chapters, aided the researcher in identification and facilitating awareness of the key issues facing competitors in the container shipping industry. Knowledge gained through this process was also highly beneficial in selecting an appropriate strategic management theoretical framework to aid data collection and analysis, in helping to design interview questions, in identifying key informants, and hence to probe more deeply into critical industry events and issues.

2.4.3 Pilot study

In order to test the issue of contrasting modes of operation in liner container shipping further, and to ensure that the main research work would be correctly focused, a pilot study was undertaken. The focus of the pilot (case) study, after discussion with Sea-Land, concentrated on two of the major container shipping lines, P&O and Evergreen Line. These firms were, according to Sea-Land, representative of the two principal contrasting modes of operation adopted by industry participants. The aim of the pilot study was to identify and explore these contrasting modes of operation further.

Criteria employed to aid analysis of each company's mode of operation included: a review of corporate histories'; analysis of service networks, schedules, and fleet/equipment; and an overview of the prevailing strategies, which each carrier employed to maintain competitive advantage. The methods of data collection used (in the pilot study) included accessing secondary sources such as industry/trade press articles, company publications and reports.

This was supplemented by telephone interviews with managers from each operator. This approach differs from the subsequent method adopted later in the main research programme in that no face-to-face interviews took place during the pilot study (apart from with the collaborating organisation, Sea-Land).

A draft of the prepared case study was sent to both P&O and to Evergreen for comments as to the accuracy of the written work. Various comments were received, and the case study was amended accordingly².

Significantly, the pilot study helped to identify, and confirm, a number of key differences between P&O and Evergreen. These differences mainly related to issues noted above such as company origins and history, conference affiliation, and in their different approaches to working with other carriers, thus substantiating the argument that contrasting modes of operation existed in the industry.

However, the case study also highlighted other differences between the carriers in terms of asset configuration, route networks, and growth strategies. For example, the study found that Evergreen was more than twice the size of P&O (in terms of vessel capacity), and P&O (at the time) had no presence in the Transpacific trade, which rather suggested it was not quite as 'global'³ as Evergreen or indeed other carriers.

Whilst the pilot study was informative, it suggested several changes in approach were necessary in respect of the main study. These changes primarily concerned:

- The need to select two more compatible firms in terms of fleet size and geographic (i.e. global) coverage;
- The need to select firms representing contrasting modes of operation identified in the container shipping business. (P&O and Evergreen were nevertheless considered to be representative of aspects which were 'typical' of the above mentioned cluster of characteristics (Woods, 1979)), and;

² The case was subsequently published by Cranfield Case Clearing House as *The Global Container Shipping Industry* (Baird & Lindsay, 1994), and is used as a teaching aid demonstrating to business students the different strategies management may adopt when participating in the same global industry.

³ 'Global' in this sense means a carrier maintains services on all three main East-West trades (i.e. Transatlantic, Transpacific, Europe-Far East), in addition to a significant network within each of the three main global trading regions (i.e. Europe, North America, and Asia), plus services connecting these regions into North-South trades (e.g. with South American and African markets).

- ❑ The need to undertake in-depth interviews with company managers in order to seek out explanations and especially to further clarify the ways in which modes of operation/strategies differed.

Nevertheless, use of a comparative perspective in the pilot study clearly helped to establish differences between each firm, and hence illustrate the distinctiveness of each. The case study research approach was therefore adapted accordingly in respect of the main study.

2.5 Data collection

2.5.1 Management research

Management research tends to differ in a number of ways from other social science research. Such differences will inevitably impact on the data collection process. In particular, management research demonstrates two major features:

- ❑ Management is essentially about controlling, influencing, and structuring the awareness of others, and this means that political issues will rarely be far removed from the research process, and;
- ❑ A considerable amount of empirical research in the social sciences is carried out on members of society who may be (or may be perceived to be) less powerful than the researchers. In management research this is generally not the case.

(Easterby-Smith et al,1991: 44)

Research of managers and management results in a situation where the subjects of research are very likely to be more powerful than the researchers themselves. Consequently, gaining access to senior managers is generally

exceedingly difficult for most researchers (Bonoma, 1985).

During the research study, it was essential to consider the priorities of the collaborating organisation, Sea-Land, if adequate management access was to be gained. Various methods were employed over the period of the research in an effort to enhance the attractiveness of the research to the collaborating organisation and to maintain interest. This included:

- ❑ Undertaking extensive background reading of the industry to ensure relevant discussion of contemporary issues of importance during meetings and correspondence;
- ❑ Submitting draft questionnaires for comment and approval, and;
- ❑ Submission of the draft pilot case study to the collaborating organisation requesting comments, contributions and advice.

Nevertheless, in management research, and where the emphasis is on qualitative methods, the researcher needs to be aware that access to managers may in some situations be obstructed if deemed harmful (Easterby-Smith et al, 1991: 2). Moreover, managers are unlikely to allow research access to their organisations unless they can see advantages derived from it. Managers will also wish to see practical consequences from any research, and more especially consequences that they are capable of exploiting.

In this study there was never any suggestion that the research findings would necessarily be ground-breaking, or might result in recommendations leading to significant competitive advantage of one firm over another. Rather, the collaborating organisation accepted that the aim (of the study) was to undertake in-depth analysis and comparison of key players in the industry in an effort to identify and analyse differences in business approach to providing a global container service. At the very least, findings were therefore expected to aid and improve understanding of strategic management in the global container shipping

industry.

2.5.2 Access to management

Access to Sea-Land management was obtained through Mr. Nick Wilde, Marketing Director (UK and Ireland), based in the UK head office located in Watford, England. This contact had managed to obtain the company's agreement to collaborate with the research, under certain conditions. Container shipping is a very competitive industry, where service differentiation is hard to achieve, and in which the slightest advantage a firm can develop over its adversaries may have great significance.

Access to Evergreen managers proved to be more difficult. Thus, a reduced level of access consequently led to fewer interviews being held with Evergreen managers (4 interviews using the Prahalad & Doz questionnaire, compared to 8 interviews with Sea-Land managers). This was not viewed as a particular problem, given the primary focus of the research was inevitably towards Sea-Land, as the collaborating organisation. However, the fact that interviews (using the questionnaire) were also undertaken with Evergreen executives, arguably permitted better than a *broad* comparison (as in Skolnick, 1966) to be achieved.

Interviews held with Evergreen managers therefore generated sufficient primary data in order to ensure a degree of valid comparison. In addition, a significant amount of secondary data pertaining to Evergreen's strategy and container shipping operations had already been collected during preparation of the pilot study, and much of this data was used and added to during the main part of the research.

2.5.3 Interviews

Of all qualitative research approaches, the in-depth interview is considered to be the most fundamental qualitative research method (Jankowicz, 1995). The interview provides an opportunity for the researcher to:

".....probe deeply to uncover new clues, open up new dimensions of a problem

and to secure vivid, accurate inclusive accounts that are based on personal experience.”

(Burgess, 1982: 107)

In preparing for interviews a researcher will need to have at least some broad questions in mind. During the study, 12 of the 25 interviews (i.e. 8 with Sea-Land, 4 with Evergreen; a 2:1 ratio) involved use of a semi-structured questionnaire (see Appendix B) adapted from the theoretical framework used to assess and analyse pressures (for global integration and for local responsiveness) faced by global businesses (Prahalad & Doz, 1987). The remaining 13 interviews also had specific purposes (see Table 2.6). Substantial preparation was therefore necessary prior to each meeting.

As more interviews were completed, so more evident became the patterns that developed (Jones, 1985). There was also a need to be perceptive and sensitive to events so that lines of inquiry could be changed and adapted during an interview.

The issue of social interaction is important in this type of research. For example, an interviewee may feign interest and seek to get the interview over with quickly. In an effort to avoid some of these pitfalls, several methods were employed during the interview programme, including:

- ❑ Ensure sufficient knowledge about the company and its activities;
- ❑ Initial phone call is better than a letter (managers are often surprisingly ready to talk);
- ❑ Use appropriate language (not too theoretical), and;
- ❑ Follow up by letter as this gives credibility and an opportunity to provide more information about the research.

Although using a tape recorder aids the listening process, it is also argued that it can be counterproductive to lose potentially revealing insights through its use (Easterby-Smith et al, 1991). This implies that interviewees may withhold information due to the presence of a tape recorder. A tape recorder was not employed during interviews carried out for this study. Instead, the semi-structured questionnaire employed contained sufficient space for the researcher to note down comments as they were made.

A total of 21 interviews were held with Sea-Land executives in the UK, the Netherlands, and in the United States over a three year period between 1993 and 1996 (see APPENDIX A). Twelve of these interviews were held in Europe, 8 of which involved the use of the semi-structured questionnaire specifically related to the Prahalad & Doz (1987) framework (see APPENDIX B). The other 4 management interviews involved general discussions about the research aims and methodology, the container shipping industry, and related issues. Eight of the Sea-Land interviews were conducted with staff in various UK offices, and 4 in the European Regional Headquarters located in Rotterdam. Interviewees were representative of all key management functions within the company, including sales and marketing, vessels and equipment, terminals, finance, and IT.

Four executives in Evergreen were interviewed using the semi-structured questionnaire based on the Prahalad & Doz framework, all in the UK, and mainly from the sales and marketing functions. One interview was held in the Glasgow regional office, and 3 in the former European Regional Headquarters in London. All Evergreen interviews involved the use of the semi-structured questionnaire modelled on the Prahalad & Doz (1987) framework. This made for a total of 12 semi-structured interviews (8 Sea-Land, 4 Evergreen) specifically relating to primary data collection in relation to the theoretical framework, a ratio of 2:1 in favour of the collaborating organisation Sea-Land.

Nine further interviews were subsequently held during 1996 with senior staff representing all key management functions in Sea-Land's global headquarters in Charlotte, North Carolina. These final interviews were used to:

- ❑ Seek confirmation (and validation) of much of the data analysed;
- ❑ Present and discuss the industry theoretical framework concerning *strategic choice* in liner container shipping developed during the research, and;
- ❑ Generally discuss major issues/challenges faced by the company and its global adversaries now and in the foreseeable future.

In general, the questionnaire modelled on the Prahalad & Doz framework presented few problems for respondents, with each interview lasting between 2 and 3 hours. Interviews began with an explanation of the aims of the research project, which in turn made the interviewees more relaxed and positive once they knew the purpose of the questions (Whyte, 1982; Buchanan et al., 1988; Jones, 1991). On occasions, it was found that interviewees would offer additional information not specifically requested as part of the framework. This necessitated a “*need to offer a listening ear*” (Crompton & Jones, 1988: 70), at times, and indeed in some instances was most valuable in highlighting potential new lines of inquiry.

The interviews were not tape recorded, as noted above. The researcher had previously conducted a number of face-to-face interviews in the ports and shipping industry, using questionnaires, and found from experience that he was able to note down all salient points in long hand. Sufficient space was left under each question on the questionnaire sheets to write in the responses. The researcher employed improvised shorthand where time was short. After each interview ended it was generally necessary to go over the responses to each question in order to include any comments made which had not been noted. In several instances, follow-up telephone and fax contact was necessary to seek confirmation or otherwise of certain statements, issues or events.

2.5.4 Validation and reducing bias

The more accurate the data is, the less likely bias will be an issue. In order to reduce interview bias, it was necessary in some instances to:

- Repeat the question (i.e. '*basic probe*') and ask interviewees to provide examples of what they meant (i.e. *explanatory probe*'), and;
- Send interviewees copies of written papers to gain new insights.

(Easterby-Smith et al, 1991: 79)

In addition to qualitative data collection and analysis, a considerable amount of quantitative secondary data is also included throughout this work. Quantitative data has been extracted from a wide range of secondary sources including academic journals, specialised industry/trade publications, as well as data emanating from interviewees themselves.

The quantitative data is essential in order to help place the subject organisations in context, to highlight movement (of firms) within the industry, to assess the extent of assets employed, and in identifying the general structure of the industry. It sets a useful context upon which a qualitative approach is then necessary in order to go a little deeper and to ask key questions (Callaghan, 1997).

A further reason for employing multiple data sources is the need for one data source to be corroborated by another (Woods, 1986). Extensive secondary data has also therefore been collected to aid the process of triangulation, and hence verification. This was necessary because there were occasions during the study when published data was used to confirm (and in some instances to refute) primary data.

2.6 Analytical techniques

2.6.1 Grounded theory

A major task in this or any other similar qualitative research study concerns how to analyse the substantial volume of qualitative data collected. There are two basic ways of analysing qualitative data:

- *Content analysis*, in which the researcher ‘goes by numbers’ and ‘frequency’; and
- *Grounded theory*, where the researcher ‘goes by feel’ and ‘intuition’, aiming to produce common or contradictory themes or patterns from the data which can be used as a basis for interpretation.

(Easterby-Smith, 1991: 105)

Table 2.7 illustrates some of the differences between content analysis and grounded theory. Bulmer (1979) questioned the grounded theory method by laying doubt on the potential of the researcher suspending his or her awareness of relevant theories and concepts until a relatively late stage in the process as this may lead to unstructured data collection. However, this need not be the case in all research. In this study, an established theoretical framework is employed in order to aid analysis of data in a structured manner, using the categories contained within the framework. Yet, as the study demonstrates, it has still proved possible to develop theory based on data collected, following subsequent analysis of that data using a structured approach.

Content analysis is more commonly used when frequencies are required from qualitative or unstructured data to be added to a computer model. A weakness of this approach is that while the researcher will be able to understand what the concepts are, this does not allow for understanding of why ideas occur and why individuals interpret events or issues in different ways (Easterby-Smith et al,

1991).

Table 2.7 Differences between ‘content analysis’ and ‘grounded theory’

Content analysis	Grounded theory
Bitty	Holistic
Go by frequency	Go by feel
Objectivity	Closer to the data, open much longer
Deductive	Inductive
Testing hypothesis	Testing out themes, developing patterns

Source: Easterby-Smith et al (1991), p. 106

Grounded theory, on the other hand, provides for a more open approach to data analysis, and recognises that large amounts of data produced by qualitative studies makes data analysis problematic. Correctly analysing qualitative data involves systematically establishing themes, patterns and categories (Glaser & Strauss, 1967). Furthermore, grounded theory is considered to be effective because:

“.....rather than forcing data within logico-deductively derived assumptions and categories, research should be used to generate grounded theory, which ‘fits’ and ‘works’ because it is derived from the concepts and categories used by social actors themselves, to interpret and organise their worlds.”

(Jones, 1987: 25)

Grounded theory is regarded as one of the interpretive methods that share the common philosophy of phenomenology (Stern, 1994). It is about developing inductively a derived theory about a phenomenon whereby the findings of the research constitute a theoretical formulation of the reality under investigation (Strauss & Corbin, 1990). Thus, in practice theory can be generated by observations made during the study, as opposed to being decided beforehand.

The purpose of grounded theory is therefore to build theory that is faithful to, and which serves to illuminate, the area under investigation (Hussey & Hussey,

1997). Moreover, the intention must be to ensure the theory is intelligible to and usable by those in the situation being studied, and is open to comment and correction by them (Turner, 1981). Particular attention has been paid to the last point, with the final 9 interviews undertaken at Sea-Land Global Headquarters in Charlotte used to discuss the theoretical framework developed during the study with executives representing all key management functions.

2.6.2 Data analysis

To facilitate data collection and analysis an existing strategic management theoretical framework (*Integration-Responsiveness Framework* - Prahalad & Doz, 1987) has been used in the study. The framework is designed to help establish the often conflicting pressures for global operational integration, and for local responsiveness in an industry. The framework offers categories for data collection and analysis, based on derived assumptions. The strategic management/globalisation literature review (Chapter 4) identified this as the only framework that permits analysis of such pressures facing global businesses, other (strategy) frameworks tending to offer potential for evaluation of issues relating to competitive advantage of the firm (e.g. Porter's (1986) *Generic Strategies* and *Value Chain*).

However, the study has also used the grounded approach in that theory is generated, derived from information provided by social actors themselves, and corresponding fully with the way in which they interpret their world (i.e. tested through subsequent interviews with collaborating organisation management).

One of the accusations that is periodically levelled at qualitative researchers is that they are disinclined to instil theoretical elements into their research (Rock, 1973). Yet using existing theory can allow the researcher to maintain order and rigour with regard to data collection, and help facilitate the data analysis process. The theoretical framework employed here is used as a template (Yin, 1984), with headings taken from it aiding categorisation, and thereafter analysis and presentation of qualitative data. Furthermore, the interview questionnaire used to gather qualitative data (see APPENDIX B) was partially designed on the

basis of the general theoretical framework itself, albeit modified to take account of specific issues relevant to the container shipping industry. This form of approach significantly eased problems normally associated with data analysis in that much of the data collected was labelled and categorised virtually straight away.

The purpose of the Prahalad & Doz framework itself is to help identify, categorise and analyse organisational pressures faced by global businesses, pressures for global operational integration, and pressures for local responsiveness to diverse market needs. Criteria proposed by Prahalad & Doz to assess such pressures were initially discussed with representatives of the collaborating organisation to ascertain their relevance to the global container shipping business. The criteria were deemed to be sufficiently comprehensive (by industry executives and by project supervisors), with no additional criteria considered necessary.

Some view the 'imposition' of such a pre-ordained theoretical framework as deleterious because it may constrain the researcher and may also exhibit a poor fit with the participants' perspectives (Bryman, 1988; Bulmer, 1954). However, the 'testing' of theories should not necessarily be frowned on; Hammersley, Scarth & Webb (1985) advocate just such a comparative case study approach, whereby research sites are strategically chosen to allow theories to be tested. An approach of this nature is considered particularly appropriate where there is a need to cope with a mass of data.

Applying a theoretical framework as a template (Yin, 1984) has also permitted the collection of data and the testing of ideas to become as systematic as possible, so that it was possible to properly address the research issue being investigated (Platt, 1988). Using an established theoretical framework that already offers useful categories facilitated the coding of data. Further, it avoided "*everything becoming chaotic and messy*" (Easterby-Smith et al, 1991: 112) as is typical with many qualitative studies.

This does not imply that the researcher was unreceptive to new issues and undercurrents emerging in the study. Indeed, it is receptiveness to new issues

and ideas that has led to the development of theory in this study (i.e. the framework on *strategic choice in container shipping*, as discussed in Chapter 7).

Although similar topics were covered during interviews with a number of respondents, through the use of semi-structured questionnaires an effort was also made to explore various occurrences of significant phenomena that may not have been covered within questions associated with the theoretical framework itself. Issues, for example, such as future plans in a specific area (e.g. new ships) or corporate history (i.e. 'the way things used to be done here') were further explored. Hence, a degree of flexibility remains a distinct advantage of qualitative research.

Thus, while the Prahalad & Doz (1987) framework permitted in-depth analysis of the pressures for global operational integration, and for local responsiveness, faced by global container shipping lines, the data gathered also enabled the researcher to develop theory. It is this latter outcome which reflects the grounded theory approach.

2.7 Limitations of the research

2.7.1 Research design

The methodological approach employed is thus a qualitative case study analysis, with a necessary focus on micro aspects. The main risk of such an approach is that results can be impressionistic and anecdotal (Bryman, 1988). Here the researcher has sought to avoid such pitfalls by using a semi-structured questionnaire for much of the data collection exercise, and by focussing the research on senior managers with responsibility for strategic decisions.

Three criteria for deciding on research design are the personal preference of the researcher, the aims and context of the research, and the question of whether or not the research will stand up to outside scrutiny (Easterby-Smith, 1991). It is not always certain that the researcher's preference will in fact constitute the best approach to comply with the aims. Moreover, whether or not the findings stand

up to outside scrutiny will depend to some extent on the accuracy of the data collected and analysed. Ultimately, as is the case in this study, the researcher may be largely dependent on what people have said during interviews, and there must always be a degree of risk attached to this, even though where possible triangulation has been used to help compensate for biases (Denzin, 1970).

2.7.2 Validity

Validity may be seen as residing in the nature of one's direct experience (Platt, 1988), and in this study the researcher has largely used informants direct experiences to investigate and then analyse issues. In some instances it may be that the researcher has been unable to gain full access to the knowledge of informants, thus affecting validity. The size and type of sample may have been a limitation in this regard. On reflection, it may have been better to focus equally on two (or more) organisations. However, as has been stressed earlier in this chapter, gaining equal access to two organisations for a study of this nature is a difficult challenge for the researcher to overcome.

2.7.3 Reliability

A further question concerns the reliability of the results. For example, would a different researcher have made similar observations? Research results have to be reliable and, if theories are generated, then it is also important that they should be applicable in other settings. This ideally means that the applicability of the findings from this study will need to be tested at some stage. Further, there is the added risk that interviewer/interviewee biases can distort findings. In addition, informant views can change, certainly over time and as events and circumstances alter. This means that what information is given or statements are made yesterday, may not always be the same tomorrow.

2.7.4 Generalisability

A question could be raised that qualitative case studies such as may not be representative. A possible solution to the question of generalisability (and hence

representation) is to study more than one case (Skolnick, 1966), and this is the approach adopted here. But a limiting factor in the research was that while the collaborating organisation provided excellent access, the comparative organisation did not. This is reflected in the different number of interviews carried out with management of each organisation, with the majority of interviews being conducted with management of the collaborating organisation.

The study sought to investigate extremes in order that the population may be more adequately represented. However, this raises another question, that of whether or not the two cases are indeed extremes. Selection of what are perceived to be two extreme cases does suggest more confident coverage of the whole field, but this also raises the problem that extremes could have special characteristics. Again, the small sample size (i.e. two cases) may have been a limiting factor in this regard.

2.7.5 Management interviews

People with specialised knowledge about the issue in question were selected for interview. A limitation of this purposive sampling method, however, may be that the researcher is never quite sure whether some people are 'typical', more especially when a part of the organisation may be undergoing changes (Jankowicz, 1995). While several informants had been with their respective organisation for many years, others were relatively recent recruits, and this difference could have influenced their views across a range of issues.

Gaining access to senior managers is generally exceedingly difficult for most researchers (Bonoma, 1985). Moreover, where the emphasis is on qualitative methods, the researcher needs to be aware that access to managers may in some situations be obstructed if deemed harmful (Easterby-Smith et al, 1991). There is therefore an added risk that access cannot be gained to the right person(s). In such an event the researcher may have to make do using informants that might not always have the desired quality or quantity of information.

2.8 Summary

This work is a mixture of both pure and applied research forms. It contains both examination of existing theory resulting from reflection, and explanation of why a situation or event occurs.

The aim and objectives of the research demanded a predominantly phenomenological approach, within which qualitative research is an associated variant. A comparative explanatory case study method is used, which investigates contemporary phenomenon using multiple sources of evidence. The research design decision laid the focus of the work on two firms (with proportionately greater emphasis on the collaborating organisation), each adopting seemingly contrasting modes of operation. A pilot study helped clarify key issues, and identify and eradicate potential weaknesses in the methodology.

Data collection and analysis has been aided through application of a strategic management analytical framework. This framework (*Integration-Responsiveness*, Prahalad & Doz, 1987) is designed to facilitate identification and analysis of the conflicting pressures facing organisations in respect of global operational integration, and local responsiveness to diverse market needs. A questionnaire (directed at liner shipping company managers) was developed based on categories contained in the framework, adjusted accordingly to take account of factors specific to the container shipping industry.

The research has employed a purposive sampling strategy in that only people considered relevant to the issues being investigated have been interviewed. Further, an effort has also been made to select people with specialised knowledge (i.e. key informant technique). Preliminary interviews with collaborating organisation management helped ensure the framework and questionnaire was appropriate, and sufficiently comprehensive to the industry in question.

The study has also used the grounded theory approach in that theory has been developed through comparative method. A new theoretical framework (*Strategic Choice in Container Shipping*) has been developed during the

research study. This framework has benefited from refinement, and subsequent verification as to its general applicability, as a result of comments received from industry practitioners during interviews with senior management of the collaborating organisation.

A number of limitations to the research have been highlighted. In addition to difficulties commonly associated with interviewing senior management of organisations, the principle limitations of the research relate to the relatively small sample size, and the dominant focus of interviews on the collaborating organisation. These limitations, which relate to the research design, inevitably raise questions concerning the validity, reliability, and generalisability of the results.

However, the alternative of widening the sample was not available, given the resource implications this would have entailed (e.g. travel costs), in addition to difficulties associated with gaining access to organisations competing with the collaborating entity. Moreover, the very high level of management access that the researcher gained (within the collaborating organisation) has arguably resulted in collection of substantial primary data that would not have been possible in the absence of a collaborating organisation.

CHAPTER 3

THE GLOBAL CONTAINER SHIPPING INDUSTRY

3.1 Introduction

Chapter 3 offers a macro perspective of the liner container shipping industry, beginning with a review of world trade developments and the effect of trade growth on world container traffic flows. The structure of the liner container shipping industry is reviewed, with particular emphasis on recent trends towards greater carrier concentration, and motivations for same.

Liner shipping is quite different from many other industries in terms of competition and regulation. In this context, liner conferences are explained, and regulation of liner shipping in the world's principle economic regions is investigated. Further analysis offers insight into the way carriers seek to differentiate their services through adoption of different competitive strategies, and an evaluation of carrier profitability provides explanations for the relatively poor financial returns achieved by the industry as a whole.

Finally, on the demand side, a review of relevant shipper surveys investigating key customer requirements and decision-making criteria is provided. Recent developments in regard to global contracts between shippers and carriers, and the role of Shippers' Councils, is also considered.

3.2 World container trade

3.2.1 World trade

Developments in world trade are driving the changes in liner shipping, hence any discussion of ocean container shipping requires analysis of world trade. The majority of world trade is conducted between and within the developed regions of Europe, North America and the Pacific Rim. These three regions accounted for 88 per cent of the value of world trade in 1995 (see Table 3.1). Between 1977 and 1995, total world trade increased by 322 per cent from \$1,200 billion to over \$5,000 billion.

The Pacific Rim economies have grown twice as fast as the developed economies of Europe and North America over the past two decades. Pacific Rim

exports increased from \$181 billion in 1977 to \$1,415 billion in 1995, a rise of 682 per cent. EC-EFTA countries share of world trade in 1995 stood at 45 per cent, Pacific Rim countries at 28 per cent, and North America at 15 per cent. The share of world export trade held by the rest of the world was 12 per cent, a significant reduction from the 25 per cent of world trade recorded by these countries in 1977.

Table 3.1 Trends in world exports (fob) 1977-1995

Region	Billion current US\$				
	1977		1995		% growth 1977-95
N. America	165	14%	776	15%	371%
EC-EFTA	560	26%	2,278	45%	307%
Pacific Rim	181	15%	1,415	28%	682%
Rest World	294	25%	603	12%	105%
Total	1,200	100%	5,072	100%	322%

Source: Euromonitor (1997) *International Marketing Data and Statistics 1997*. 2nd edition. London: Euromonitor Plc.

3.2.2 World container traffic

According to the International Association of Ports and Harbors (IAPH, 1999), world economic development has continued along the positive path that began in 1993. The world real GDP expanded by 3% in 1996, 3.2% in 1997, with 2% likely in 1998 due to the effects of the Asian and Russian crises.

What is of particular interest to investors in container terminals, is the fact that container growth runs at a premium to GDP growth: average world container growth rates of 10-15% per annum over recent decades are more than double GDP growth (Clague, 1999). This phenomenon relating to container traffic is regarded as highly 'bankable' with investors keen to lend against this kind of trend.

Table 3.2 shows the significant strides containerisation has made in the transport of world trade, from a 16.3% share in 1980 to almost 61% in 1997. Drewry Shipping Consultants estimate that the potential upper limit for containerisation of the general cargo market is 70 per cent and that this limit is

likely to be reached early in the next century (Drewry Shipping Consultants, 1996).

Table 3.2 World seaborne trade by value, 1980-1997

Cargo Category	% of cargo value				
	1980	1990	1992	1996	1997
Oil	34.9	18.4	14.9	13.8	10.8
Dry Bulk	14.1	12.8	10.6	9.3	9.0
Non-Containerised General Cargo	34.7	27.1	23.7	17.9	19.0
Containers	16.3	41.7	50.8	59.0	60.8

Source: Drewry Shipping Consultants (1999), partially derived from UNCTAD

Container transport is the fastest growing market in the maritime transport sector and is expected to continue to grow due to:

- ❑ *The continued expansion of containerised shipping by developing countries;*
- ❑ *Increased trade in higher value goods;*
- ❑ *The trend towards globalisation by multinational manufacturers;*
- ❑ *The growth in deep-sea ship size and subsequent increase in feeder traffic and transshipment.*

(IAPH, 1999; 16)

Table 3.3 illustrates the growth in container traffic by geographic area. Between 1980 and 1997 total world port container traffic throughput increased by more than a factor of four, from 38.7 million TEU to 170.3 million TEU. Forecasts for 2005 suggest container traffic will grow by a approximately a further 100 million TEU to 271.3 million TEU, an increase of 59% over the 1997-2005 period. Over the 1980-2005 period container traffic will have increased by seven times.

The world's most dominant container port region, Asia, is expected to record a throughput of some 117 million TEU by 2005, 43% of the world total. Second

largest port area, Western Europe, is forecast to have 62.3 million TEU in 2005, 23% of world container traffic. Significant growth is anticipated in South American ports where throughput is expected to reach over 20 million TEU in 2005, an increase of 80% since 1997. In order to cope with this ongoing expansion, the IAPH estimate that more than 200 new terminals will be required by 2005, based on an average capacity of 500,000 containers a year per terminal.

Table 3.3 Forecast of additional world container port throughput to 2005
Million TEU

Region	1980 container port throughput	1997 container port throughput	Forecast additional throughput by 2005	% change 1997-2005
Asia	-	73.4	117.0	+59%
Western Europe	-	38.6	62.3	+61%
North America	-	24.5	32.3	+32%
South America	-	11.5	20.7	+80%
Middle East	-	8	14.1	+76%
Africa	-	5.3	8.7	+64%
South Asia	-	4.3	9.2	+113%
Australasia	-	3.8	5.1	+34%
Eastern Europe	-	0.9	1.9	+111%
Total	38.7	170.3	271.3	+59%

Source: Derived from Drewry Shipping Consultants (1998) and IAPH (1999)

3.2.3 East-West container trades

As world trade is dominated by North American, European and Asian markets, so it is that the majority of world container traffic flows to and from these three regions. The principal East-West container trades are therefore:

- Transpacific routes between North America and Asia
- Europe-Asia routes
- Transatlantic routes between Europe and North America.

Table 3.4 gives a breakdown of containers carried by sea on the three major East-West global trade routes¹.

Table 3.4 Breakdown of container traffic on East-West trades, 1998

Main East-West Routes	1998	Forecast in 2002	Million TEU
			% change 1998/2002
North America-Asia WB	3.7	4.1	
Asia-North America EB	5.4	6.8	
Sub Total	9.1	10.9	+20%
Asia-Europe WB	3.2	4.2	
Europe-Asia EB	2.8	3.7	
Sub Total	6.0	7.9	+32%
Europe-North America WB	3.0	3.6	
North America-Europe EB	2.3	2.7	
Sub Total	5.3	6.3	+19%
Total	20.4	25.1	+23%

Source: Derived from Standard & Poor's DRI

The Transpacific is the largest trade with 9.1 million TEU transported in 1998. Second largest trade is Europe-Asia with 6.0 TEU followed by the Transatlantic with 5.3 million TEU. This resulted in a total of 20.4 million TEU shipped between the three main global trading regions. Estimates for 2002 suggest these volumes will rise by 23% to over 25 million TEU, with the biggest increase (+32%) in Europe-Asia trade.

The above figures clearly show the imbalance in container trade leaving operators with endless management of empty box movements. The 1998 Asian crisis exacerbated this imbalance with increased outbound cargo from Asia and simultaneously reduced inbound cargo to Asia. In 1998, for every 10 loaded containers entering Europe from Asia, there were around 6 loaded ones on the return leg, i.e. 40% of empty containers requiring repositioning. On the Transpacific trade, the imbalance was estimated at 1.6 million TEU, after attaining near balance two years previously (IAPH, 1999).

¹ It should be noted that port throughput appears greater than containers actually shipped as ports record the number of lifts and relay or transshipment containers incur additional lifts in port, resulting in some double counting.

In addition to the three principal East-West trades, which together accounted for 44% of world container traffic (at 1997 levels), other large container flows exist on trades linking the three main trading blocs with South American and African markets (so-called North-South trades) and on Intra-Regional trades (e.g. intra-Europe, intra-Asia). North-south container trade between the Southern Hemisphere and the three main global trading blocs in 1994 totalled 9.6 million TEU in 1997, 21% of the world total (Cargo Systems, 1999). Other significant container flows were recorded in Intra-Regional trade (i.e. trade between European countries, trade within Asia etc.) which in 1997 totalled 15.2 million TEU, or 34% of the world total.

3.3 Industry structure

3.3.1 Carrier consolidation

The container shipping industry has become increasingly concentrated during recent years as lines have merged with or acquired other lines, and this trend is forecast to continue (Fossey, 1998). In November 1998 the largest 20 lines controlled 3.1 million TEU of shipboard capacity which is equivalent to just over 50.0 per cent of capacity in service world-wide (see Table 3.5).

According to the IAPH (1999), by early 1999 the 25 leading carriers controlled almost 60% of worldwide shipboard container capacity, equivalent to 3.6 million TEU out of a total world capacity of 6.0 million TEU. Some recent notable changes in liner ownership include:

- ❑ P&O's merger with Nedlloyd in 1997;
- ❑ Hanjin's acquisition of DSR Senator Lines in 1998;
- ❑ Neptune Orient's purchase of APL in 1998;
- ❑ CP Ships acquisitions of Canada Maritime, Cast, Contship, Ivaran, and merger with TMM;

- Maersk's acquisition of Safmarine in 1999 and, subject to due diligence, Sea-Land.

Table 3.5 Leading 20 container service operators (September 1998) on the basis of number of vessels and total shipboard capacity (TEU)

Rank	Operator	Country	Ships	Total TEU
1	Maersk Line	Denmark	161	346,123
2	Evergreen	Taiwan	128	280,237
3	P&O Nedlloyd	UK/Dutch	111	250,858
4	Med SC	Switz.	134	220,745
5	Hanjin	Korea	67	213,081
6	Sea-Land	USA	91	211,358
7	COSCO	China	128	202,094
8	APL	Singapore	76	201,075
9	NYK/TSK	Japan	74	163,930
10	Mitsui OSK	Japan	65	133,681
11	Hyundai	Korea	36	116,644
12	Zim	Israel	62	111,293
13	CP Ships	Canada	55	105,322
14	CMA-CGM	France	61	91,600
15	Hapag Lloyd	Germany	27	90,879
16	OOCL	H. Kong	33	90,063
17	K Line	Japan	44	89,717
18	Yangming	Taiwan	32	79,840
19	UASC	UAE	52	59,331
20	Saf./CMB	Denmark	45	55,584

Source: Containerisation International, November 1998.

At the same time as the industry becomes more concentrated, a number of factors are combining to pressurise lines into introducing bigger vessels. The most significant of these factors appear to be:

- *As world trade continues to expand... ..this means that additional capacity is needed;*
- *The search for lower unit costs, resulting from a seemingly unstoppable decline in freight rates, motivates lines to build ever larger vessels;*
- *Impending replacement of outdated tonnage is expected to result in a further spate of orders for big new ships in the next few years.*

(Baird, 1999: 168-169)

The capacity of the largest container vessels has almost tripled since 1980 from 3,000 TEU to 8,000 TEU (Maersk's 'S' Class vessels have a stated capacity of 6,600 TEU but are believed capable of carrying 8,000 TEU, according to Cargo Systems). In the Post-Panamax sector (i.e. vessels too large to transit the Panama Canal, usually carrying in excess of 4,000 TEU), there were 234 vessels in operation at the end of 1997 (Hoffman, 1998). Around 50 of these ships have a capacity of more than 5,000 TEU. A further 60 Post-Panamax vessels are expected to be delivered by the turn of the millennium.

Today all the top 20 carriers operate ships of 3,500 TEU and above. Vessels in the 4,500-4,999 TEU capacity range only came into service in force since 1995, and the first ships to break the 5,000 TEU and then 6,000 TEU barriers entered service in 1996. As can be seen from Table 3.6, most of the major lines now have vessels of 5,000 TEU or above on order at the end of 1999, with some 64 of these ships scheduled for delivery by 2001.

Table 3.6 Post-Panamax ships on order, top 20 lines (September 1999)

Carrier	No & size of ships	Total TEU capacity	Delivery dates
Maersk	5 x 6,600	33,000	1999/2000
Maersk	5 x 6,200	31,000	2000
P&O Nedlloyd	4 x 6,788	27,152	2000/1
P&O Nedlloyd	5 x 5,460	27,300	1999/2000
Evergreen	9 x 5,652	50,868	1999/2001
Cosco	7 x 5,250	36,750	2001
Hanjin	7 x 5,800	40,600	2000/1
Hapag Lloyd	7 x 4,800	33,600	2000
OOCL	6 x 5,500	33,000	2000
Yangming	5 x 5,500	27,500	2000/1
Mitsui OSK	3 x 5,500	16,500	2001
APL	2 x 5,500	11,000	2001

Source: Containerisation International, November 1999: 43

According to ship classification society Germanischer Lloyd (Payer, 1999), by 2010 ships of up to 15,000 TEU could be in operation on the main East-West routes. These 150,000 DWT twin-enginned vessels would have a length of 400/450 m, a width of 69/70 m enabling 24 rows of containers across, and a draft of 16/18 m. Such 'jumbo' container ships will place additional demands on ports

and this expectation is leading to development of new container terminals at 'offshore' locations (e.g. Bahamas, Canaries, Aden, Sardinia etc.) at which infrastructure specially designed for the mega ships can more easily be established than in traditional liner ports (Cullinane, Khanna & Song, 1999; Baird, 1999).

3.3.2 Motives for consolidation

Aside from merger and acquisition activity, the top 20 or so container shipping lines have formed themselves into several global operating alliances within which the ships owned by each line are pooled together to provide for an extensive range of joint services on the main global East-West arterial routes and on some North-South routes (see Table 3.7). In 1998 there were eight such alliances in place. Collectively, these alliances accounted for almost 60 per cent of world container ship capacity, equivalent to just under 3.0 million TEU.

Table 3.7 Main container shipping alliances, 1998		
Grouping	Total Ship Slots (TEU)	% of world total
<i>Grand Alliance:</i> Hapag-Lloyd; NYK; P&O Nedlloyd; MISC, OOCL	635,680	13.4%
Maersk/Sea-Land	467,541	9.8%
K Line; Cosco; Yangming	423,462	8.9%
<i>New World Alliance:</i> APL; HMM; Mitsui OSK	382,125	8.0%
<i>United Alliance:</i> Hanjin; DSR; Cho Yang; UASC	330,300	6.9%
Evergreen/Uniglor/L. Triestino	256,254	5.4%
Canada Maritime Group	153,934	3.2%
CMA; NSCSA; Norasia	157,072	3.3%
Sub Total	2,806,368	58.9%
Source: Cargo Systems (1999), <i>The Future for the Container Shipping Industry</i>		

In terms of the main East-West arterial trades, the significance of the major liner groupings is indisputable; an estimated 80 per cent of the Transpacific and nearly 70 per cent of both the Asia-Europe and Transatlantic container trades are under the control of the new alliances (Ma, 1996). Furthermore, unlike previous consortia arrangements which tended to be specific to a single trade, most of the new partnerships operate on a global basis covering all three major East-West trades and in certain cases North-South trades as well.

A number of factors motivate carriers in their quest for global coverage through alliances, including (Lim, 1996; Ma, 1996; Baird, 1997):

- ❑ As industry has globalised, so major manufacturers are increasingly insisting on single supplier arrangements (for components and services) on a global basis. This means that if a line wants Unilever's, Ford's or Proctor & Gamble's Transatlantic business, it may also have to offer the company Transpacific and Europe-Far East services as well, and this means global scope is essential;
- ❑ This development has been fostered by the introduction of global contracts between lines and shippers, with shippers using their global volumes to leverage price discounts, and lines using these large volumes as their base cargo. Global contracts are becoming more common, helped by the demise of the liner conference system and industry deregulation;
- ❑ As ships get bigger (now over 6,000 TEU capacity) a single line will find it increasingly difficult to fill all these slots on its own. A partnership allows for space sharing, still enabling each line to benefit from industry economies of scale;
- ❑ Each of the main East-West routes suffer from trade imbalances. Maintaining services on all three routes allows a global carrier to reposition empty containers to areas of demand more easily and cheaply than a single trade

carrier is able to do. Alliances also permit the sharing of containers and terminals among partners on a world-wide basis.

The formation of alliances was believed to be the answer to poor profitability in liner container shipping, following consistent decreases in freight rates over recent years (Cargo Systems, 1999). Other objectives of alliances are:

- ❑ *To strengthen cargo consolidation via the deployment of larger container ships, thereby maximising slot usage. The only way to fill most post-Panamax vessels and offer weekly sailings has been to engage in ship sharing;*
- ❑ *To spread the financial risk of capital investment in both ship construction and terminal and intermodal operations;*
- ❑ *To achieve better vessel and container deployment at reduced costs;*
- ❑ *To achieve economies of scale in land-side operations through a more efficient use and to establish a stronger bargaining position;*
- ❑ *To improve geographical coverage by mutually complementing routes served, while also rationalising call patterns.*

(Cargo Systems, 1999; 120)

At the same time as global alliances among major shipping lines are restructuring the industry, the barriers to entry have become that much greater. The likelihood of a new entrant penetrating the market has now become increasingly remote as the capital investment needed to participate in the industry has escalated: each of the leading lines today employ more than 100 ships with a combined loading capacity in excess of a quarter of a million TEU. This, added to investments in container terminals and other equipment, plus costs associated with establishing a global network of sales offices, easily amounts to an outlay exceeding \$2.0 billion.

3.4 Nature of competition

It is inevitable that a number of external environmental pressures will impact on and determine the nature of competition in the global container shipping industry. In addition to the competitive dynamics associated with each individual trade, such factors include liner conferences, government regulation of liner shipping, plus pressures emanating from customers, many of whom are much larger in terms of turnover than the lines themselves.

3.4.1 Liner conferences

Liner conferences are agreements among liner companies serving on a given trade route (Sletmo & Holste, 1994). More specifically, a liner conference is:

“A group of two or more vessel-operating carriers, which provides international liner services for the carriage of cargo on a particular route or routes within specified geographical limits and that.....operate under uniform or common freight rates.”

(Lewis, 1996; 31)

The conference system began in 1875, when British liner companies in the UK-Calcutta trade formed the Calcutta Conference (Nayar, 1996). Conferences, otherwise described as cartels and at one time referred to as “rings”, were established during the period of British imperialism and represented an attempt, initially by British shipowners, to maintain market shares in an increasingly liberalised shipping era (Cafruny, 1987).

Within a conference, liner shipping companies seek to create long-term relationships between themselves and their customers through various methods such as the use of loyalty contracts, dual rate systems, and more recently through the use of service contracts which commit a shipper to ship a certain amount of cargo on conference vessels over a given time period. However, in reality there is not one, but several types of liner conference, including (Sletmo & Williams, 1981):

- ❑ The large all-embracing, classic closed conference (i.e. new members must first be acceptable to existing members) such as the Far Eastern Freight Conference (FEFC) which sets rates on the Europe-Far east route;
- ❑ The conferences covering protected trades with government cargo-sharing practices, operating in areas such as West Africa and South America;
- ❑ The smaller more tightly-knit version of the classic conference; and
- ❑ The 'open' conference or agreement which prevail in US container trades which are free for lines to join on existing terms and are primarily pricing agreements.

Being quasi-monopolies, the chief aim of conferences are to eliminate damaging price competition among the members and to bar entry of new competitors. However, as containerisation of liner trades expanded, it became clear that the market power held by traditional conference members was being undermined by new entrants. While conference lines were determined to continue with their differential tariff principle of charging 'what the traffic could bear' (i.e. applying a higher tariff rate on higher value goods even though the cargo inside a container occupied the same amount of space on the ship as other types of cargo in containers) this created the conditions conducive to the rise of non-conference carriers. Non-conference lines such as Evergreen entered the Asia/US East Coast and Asia/Europe trades in the 1970's offering a more simple (certainly as far as customers were concerned) 'Freight-all-Kinds' (FAK) rate to shippers. This permitted Evergreen and other independent lines to 'cream' the higher rated cargoes from the established conference carriers (Lim, 1996).

As the percentage of capacity offered by non-conference lines has increased in recent years, so the influence of conferences in many trades has diminished (Heaver, 1994; Nayar, 1996). Conferences have also suffered from concerted shipper opposition and perceived abuses drew the attention of national and

supra-national governments'. Conferences still exist but to some extent they have been replaced on the main east-west trade routes by new style Rate Agreements and Capacity Management (or 'stabilisation') Agreements.

3.4.2 Regulation of liner shipping

According to Nayar (1996), a number of crucial influences exist which help to moderate the monopolistic tendency of the conference system. Such influences, or rather what Nayar terms *countervailing powers*, consist primarily of the state, and to a lesser extent shippers, mainly through Shippers' Councils (see section 3.6.3). Regulatory pressures surrounding the activities of container lines principally emanate from the Federal Maritime Commission (FMC) of the United States Government and from the Competition Directorate (DGIV) within the European Commission (EC). Although most governments seek to control the presence of market power through anti-trust legislation, the majority of OECD countries provide conferences and consortia in the liner shipping industry with immunity from anti-trust legislation.

3.4.2.1 Liner shipping regulation in the USA

In the USA, the 1984 US Shipping Act fundamentally altered the conduct of liner services contracting in US trades. This Act gave conferences the ability to set intermodal rates and also allowed shippers and carriers to negotiate service contracts (i.e. an agreement between a shipper and a line for the transport of a set number of containers at an agreed rate over a fixed period), although the latter must still be individually filed with the FMC. The introduction and subsequently increased use of service contracts resulted in further marginalisation of traditional conference tariffs but still meant that negotiated rates between shipper and carrier (at least in the USA) were transparent for all to see. Furthermore, the Act eliminated loyalty contracts and gave lines' the right of Independent Action (IA) whereby a conference member was permitted to negotiate a lower freight rate (still filed with the FMC) in order to prevent the loss of important traffic to a non-conference line.

It has been suggested that the 1984 US Shipping Act actually extended carrier anti-trust immunity and gave carriers relatively greater advantages than shippers (Horowitz, 1996). What did not change, however, was the need for rates to be filed with the FMC with shippers being unable to negotiate with carriers in confidence. Shipper dissatisfaction with the 1984 Act, largely reflected in lobbying undertaken by the National Industrial Transportation League (NITL), an organisation representing US shippers, resulted in Congress enacting the Ocean Shipping Reform Act (OSRA) in 1998, the latter becoming effective in May 1999. This Act amended the 1984 US Shipping Act. The most important changes under OSRA are as follows:

- ❑ *The terms and conditions of service contracts will no longer be made fully available to any interested parties for review and equal access;*
- ❑ *Conferences and rate agreements will have to allow more flexibility to their members in the areas of pricing and contracting ('independent action');*
- ❑ *Tariff formats will become more flexible.....with FMC filing no longer mandatory.*

(Cargo Systems, 1999; 21-22)

The most significant change resulting from OSRA is expected to be allowing confidential service contracts between a shipper and a carrier (Weil, 1999). The Act recognised the need for regulations to be altered in order to adapt to changes taking place in the container shipping business, for example, the development of global intermodal carriers and alliances, plus the fact that there is no longer any significant US-flag fleet. Regulation is now designed to promote export growth whilst ensuring competition would not be unfair to consumers and competitors.

However, OSRA does not deregulate the industry completely, and the forces of supply and demand are unlikely to bring about dramatic rate reductions (Shashikumar, 1999). What it does do, however, is allow market forces to play a

greater role in making commercial decisions, with the main changes resulting from OSRA expected to be as follows:

- ❑ *Carriers will have to become more flexible and customer-orientated to maintain their market share;*
- ❑ *OSRA will shift the focus from conferences to the individual operators who will need to go beyond bare-bones services and provide a variety of value added services;*
- ❑ *The conference system.....is on its way out in the US trades..... (to be replaced by) liberal carrier agreements that do not interfere with commercial decisions of individual operators.*

(Shashikumar, 1999; 26-27)

Most of the liner activity referred to in the regulations is concerned with ocean freight rates. In addition to setting freight rates as a group through enjoying anti-trust immunity, the liner shipping industry also implements, from time to time, a number of surcharges (e.g. bunker surcharge, currency adjustment surcharge etc.). These surcharges are added to the basic freight rate when there is an adverse change in a cost factor. Shippers' Councils are exerting significant pressure on regulatory bodies as well as on the lines for the elimination of these surcharges and for a simplification of conference tariffs (Menachof, 1993).

3.4.2.2 Liner shipping regulation in Europe

In Europe, the EC adopted a law in 1986 that gave (or rather confirmed) anti-trust immunity to conferences in European trades. However, while EC Regulation 870/95 encourages IA's and service contracts, it does not accept extensive inland cooperation between lines or broad-based capacity management agreements. Recognising the increasingly significant role played by liner consortia (within and outside a conference), Regulation 870/95 exempts

four types of liner shipping consortia from the prohibition on anti-competitive practices under Article 85 of the EC Treaty, these being:

- ❑ Consortia operating within a conference with less than 30 per cent of the direct trade;
- ❑ Consortia operating outside conferences with less than 35 per cent of the direct trade;
- ❑ Conference consortia with between 30-50 per cent of the direct trade; and
- ❑ Non-conference consortia with between 30-50 per cent of the direct trade.

This ruling effectively means that the vast majority of existing consortia serving Europe (particularly on East-West routes) qualify for exemption. However, some restructuring of consortia on smaller North-South trades such as Europe-South Africa has taken place so that the new conditions for immunity can be met. Conference service contracts are not covered by the shipping block exemption regulation in the EU. Further, the European Commission (EC) prohibits conference contracts that cover the movement of cargo between ports and inland points in Europe; this is the opposite of the stance taken in the US. Consequently, carriers in the US-Europe trade may participate in conference service contracts covering the US-Europe ocean movements, but they then have to sign individual service contracts covering European inland transport for the same shipper.

In September 1998 the EC imposed fines totalling \$298 million on carrier members of the Trans-Atlantic Conference Agreement (TACA) for what was described as 'anti-competitive practices'. Fines were imposed because TACA members had entered into a series of agreements that were outside of the scope of Regulation 4056/86 which permits carriers to fix prices on the ocean leg. The EC stated that TACA members enjoyed a market share in excess of 60% and had been in a dominant position and had abused this position by:

- ❑ *Imposing restrictions on the availability of service contracts, and;*
- ❑ *Inducing and assisting potential competitors to join the market as TACA members, thereby eliminating price competition.*

(Cargo Systems, 1999; 48-49)

Fines were calculated on the basis of the degree of each carrier's violations, market share in the trade, and total revenues. P&O Nedlloyd was subject to the heaviest fine, about \$38 million. Maersk and Sea-Land were each fined \$25 million. The EC reserved the right to impose further fines at a later date for practices relating to inland transport services offered within EU territory. Currently a new carrier grouping is being planned for the North Atlantic trade which meets the requirements of the EC.

3.4.2.3 Liner shipping regulation in Asia

Much of Asia, unlike Europe or the USA, appears unencumbered by such regulations, although the presence of strong, well-organised, and often statutory Shippers' Councils can exert significant pressure on lines to limit anti-competitive behaviour. Emphasising the difference in Asia, Brooks (1996) concluded:

"....as the largest and fastest growing trading area and one which has a completely different view of market power, Asia (has become) the practice ground on which these consortia can explore the limits cooperation can reach."

(Brooks, 1996; 22)

Yet such a statement is accurate only up to a point. Inevitably, liner operators trading *within* Asia will not be directly affected by US or EC regulations. But this is not the case for global carriers and liner consortia serving trades between Asia-US or between Asia-Europe. Thus, regulatory decisions in the US and in

Europe do, in fact, condition all three major global east-west trades, irrespective of any perceived lack of such regulation in Asia.

Furthermore, partly due to recent legislative activity in the US and Europe, a number of Asian countries now appear to be reviewing their competition laws or maritime antitrust arrangements. In China, the Shanghai Shipping Exchange has imposed regulations with a filing requirement for tariffs and given the agency administering the regulatory scheme the right to intervene in certain cases where the rates are deemed to be too high or low (Weil, 1999). Thailand is pressing ahead with maritime legislation that could have a considerable effect on container lines calling at Thai ports, and Japan is currently amending its existing conference immunity regime (Cargo Systems, 1999). To achieve common provisions to reduce discrimination among nations, the World Trade Organisation (WTO) could in future include maritime services. This appears to be one option to bring about increased standardisation.

3.5 Industry competitive dynamics

Containerisation has created a totally different liner shipping industry and a new competitive environment (Sager, 1991; Brooks, 1996; Eyre, 1996). In this environment many traditional lines have disappeared (a process which has not yet ended), conferences are increasingly 'powerless', and freight rates are not decided by the lines but by shippers who play one carrier against another in what has become a buyers market. Moreover, given the pace and scope of these industry changes, the quite different competitive situation liner shipping is facing today does not mean that change is ended and it is inevitable that there will be more change in the future (Molenaar, 1991).

3.5.1 Commercial entities selling cargo space

It was mentioned above that the recently formed global alliances now control an estimated 80 per cent of Transpacific and 70 per cent of Asia/Europe container traffic (Ma, 1996). If one also considers the dominant independent lines -

Evergreen, COSCO, and ZIM - this does indeed seem to indicate that the main global East-West container trades are dominated by relatively few large operators.

However, there are those who suggest that operational consolidation, as such, does not necessarily result in commercial consolidation (Kadar & De Proost, 1997a). While the top 20 lines have increased their share of the major trade routes from roughly 70% in 1990 to 85% in 1995, such advances have been made in the form of collaborative arrangements. There may well be several alliances which control a large proportion of global container traffic, but when one separates the supply offered on each trade by individual commercial entity, the picture remains one of capacity fragmentation.

Table 3.8 shows that, on the Transatlantic, Europe-Far East, and Transpacific trades, while these routes appear to be dominated by the top 20 carriers (i.e. mostly operating in 7-8 alliances), in reality shippers have a choice of, 48 carriers, 41 carriers, and 32 carriers respectively on each trade. The explanation for this lies in the fact that the latter figures include a number of NVOCC's (non vessel operating common carriers) who charter space from the lines but who do not themselves provide ships or containers.

Table 3.8 Container shipping capacity supplied by commercial entity and by route

Trade route	Number of commercial entities
Transatlantic	48
Europe-Far East	41
Europe-Gulf/Indian Sub-Continent	21
Transpacific	32
Europe-SE Africa	13
Europe-Australasia	9
Europe-S America	43
N America-S America	55
N America-Australasia	10

Source: Kadar & De Proost (1997a) Supply and Demand in Liner Shipping, *Containerisation International*, June, pp.61-65.

From the customer viewpoint, therefore, a plethora of commercial entities, with ever less distinguishable products, compete on every major trade. This high

level of fragmentation, suggest Kadar & De Proost, coupled with the classic liner shipping top line or volume driven sales philosophy (i.e. 'just fill the ships'), has resulted in rates being driven down ever further.

3.5.2 Attempts to differentiate liner services

To counteract this, carriers have generally copied each others' strategies in seeking to improve their financial position. During the last decade the liner industry has attempted to return to profitability primarily through cutting costs. Usually this has meant a logical progression of:

- ❑ A focus on joint services;
- ❑ Restructuring and overhead cost reduction;
- ❑ Global alliances; and now
- ❑ Mergers and acquisitions.

However, in many cases the benefits of these cost cutting initiatives have simply been passed on to customers in the form of lower freight rates, resulting in no real gain in terms of profitability. This cycle appears to have been exacerbated by a number of factors, according to Kadar & De Proost (1997a), including:

- ❑ Most industry innovations are easily and quickly copied;
- ❑ Shipper-carrier relationships are adversarial, resulting in low customer loyalty and leading to more pressure for lower rates;
- ❑ Decline in conference control has diminished any price discipline among carriers (although it is arguable if such price discipline existed in the first place); and

- Introduction of larger ships has resulted in a concerted effort to fill slots.

These factors have resulted in a need for the industry to adopt more targeted and sophisticated marketing, better customer segmentation, develop more tailored services, and implement simpler pricing structures (Kadar & De Proost, 1997b). These more focused strategies are also necessary due to the fundamental way in which the industry has changed. In essence, 'traditional' shipping lines no longer exist - they have been replaced by international intermodal transportation companies (Sager, 1991; Heaver, 1994; Brooks, 1996; Eyre, 1996).

Industry changes over the past decade or so appear to closely correspond with forecasts made in 1991 by a Korean shipping line executive, Cheon Kyu (1991). Cheon Kyu suggested that industry pressures would eventually result in four very different groups of lines:

- Lines offering a high level intermodal service with global networks;
- Lines offering a lower service level with a regional network;
- Lines offering a high level intermodal service with a regional network; and
- Lines offering a low service level with a global network.

According to this theory, lines under the last two categories would find it difficult to set a workable global strategy. A high level intermodal service (e.g. fast transit times, extensive land transport interests, value-added activities etc.) would be expected to be demanded by large global shippers and these customers are unlikely to be interested in a line which only offers regional (or 'niche') services. Equally, these same global customers may be less interested in a global network which offers only a low service level. Cheon Kyu argued that the only approach likely to be successful is the first one (i.e. high level intermodal

service and global network) which he terms a 'forward strategy', and in which key factors will be carrier innovation in terms of technology, cargo tracking, and cutting transit times.

Looking at the situation as it is today, it is possible to see a quite similar scenario developing, for example:

- ❑ 'High quality' lines such as Sea-Land and Maersk now provide a high level intermodal service with a global transport network;
- ❑ Lines such as CAST and Atlantic Container Line (ACL) offer a high level regional service (e.g. only on the Transatlantic trade);
- ❑ Mediterranean Shipping Company (MSC) offer a low-level service on a number of regional routes (although this line is now increasing its route network in an effort to become a global operator), and;
- ❑ Evergreen Line provide a low level global round-the-world service (e.g. slower transit times, limited intermodal capability or value-added activities).

3.5.3 Ocean carrier profitability

Even though profitable operators exist, the trend is for an increasing number of carriers to experience financial losses from container shipping activities. Major lines reporting a deficit in 1998 included Sea-Land, P&O Nedlloyd, OOIL, NOL/APL, and Zim. Table 3.9 presents financial data relating to seventeen major container lines for 1998. Information is not available for Chinese state-owned carrier Cosco, or for Mediterranean Shipping Company (MSC) which is privately owned. Nevertheless, figures have been gathered for 15 of the top-20 lines, plus one just outside the top-20 (MISC), and one niche carrier (ACL, which operates only on the Atlantic trade).

Net profit margins (NPM) for all lines in the top-20 fails to reach above 6.0%, with eleven lines falling below 2.0%. With \$billions invested in assets, return on investment (ROI) likewise falls well below what would be expected in other industries. Conglomerates such as P&O insist on ROI of 15% from each of its

operating divisions; clearly the P&O container shipping division's 3.47% ROI is far from achieving this target.

Table 3.9 Financial performance and key performance indicators of selected major liner shipping companies, 1998

Company	Revenues	Net Profit	Assets	NPM	\$ Millions
					ROI
Maersk	5,272	188	5,851	3.60%	1.80%
Evergreen	1,639	34	2,792	2.05%	3.60%
P&O Nedlloyd	3,411	-2	2,337	-0.10%	3.47%
Hanjin	3,444	18	3,696	0.50%	3.10%
Sea-Land	3,916	-70	2,452	-1.80%	5.40%
NOL/APL	6,485	-438	5,935	-6.75%	-2.04%
NYK	9,825	113	13,620	1.10%	3.20%
Mitsui OSK	7,344	64	10,661	0.90%	4.60%
Hyundai	4,049	43	5,007	1.10%	7.80%
Zim	1,470	-4.9	-	-0.33%	-
CP Ships	1,775	101	1,187	5.70%	9.10%
CMA-CGM	1,305	43	893	3.30%	6.80%
OOIL	1,833	0.2	1,801	0.01%	1.20%
K Line	4,768	14	4,742	0.30%	1.10%
Yangming	1,180	18	1,159	1.50%	-5.40%
ACL	297	30	222	10.00%	22.30%
MISC	866	165	2,083	19.10%	7.90%

Source: Containerisation International, October 1999, pp. 38-39.

Notes: Figures for certain carriers (e.g. Maersk, NYK, and Mitsui) also include other shipping activities such as tanker, car carriers etc.)

Table 3.10 Liner shipping profitability by ocean freight service, 1997

	% of operating profit
Port/terminal operations	29%
Container leasing	26%
Forwarders/intermediaries	19%
Inland transportation	18%
Vessel operations	8%

Source: Cargo Systems (1999), based on Kadar (1999)

Breaking down the industry by operating sector, Table 3.10 illustrates the poor level of profits that are achieved through vessel operations. Compared with other operations linked to the liner shipping industry, it is clear that vessel operations return lower profits. Activities such as terminal operations, container

leasing, freight forwarding and inland transportation, each offer potentially much greater returns. This largely explains the desire of some lines to integrate into these related activities.

An important contributor to the low profitability in respect of vessel operations has been the decline in freight rates and consequently a decline in revenue per slot. A recent study (Drewry Shipping Consultants, 1999) found that average revenue per TEU fell by 13.8 per cent between 1996-1998, from \$1,590 to \$1,370 (Table 3.11). Total carrier earnings for the period fell by 1.2 per cent from \$77.9 billion in 1996 to \$77 billion in 1998. Clearly, while carriers are lifting more containers (as world trade continues to grow), freight rates and revenues are actually falling.

Table 3.11 Nominal global carrier income, 1996-1998

Year	Loaded Container Moves (million TEU)	Average Revenue per TEU (\$ million)*	Estimated Gross Carrier Income (\$ billion)
1996	49.0	1,590	77.9
1997	53.5	1,451	77.6
1998	56.2	1,370	77.0

* As reported by P&O Nedlloyd

Source: Drewry Shipping Consultants, 1999

A number of factors suggest low freight rates will continue to plague the industry for the foreseeable future:

- *Regulatory bodies in Europe and the US have assailed many of the anti-trust exemptions previously enjoyed by carriers, with the result that carrier rate cohesion is weak and growing weaker;*
- *Globalisation of the world economy depends upon highly efficient and price competitive container shipping. Attempts to 'turn the clock back' rate wise will be met by very powerful opposition;*
- *There is little prospect of a long term, global under-supply of shipping space, especially as shipbuilding prices remain very competitive;*

- ❑ *Container shipping is a largely fixed cost operation which has an inherent structural tendency to promote marginal pricing – and deregulation will amplify this characteristic, and;*
- ❑ *Global pressure exists on all service providers for higher quality at lower price – and liner shipping will not be immune to this.*

(European Logistics Management, October 1999; 14)

The container shipping industry's problems therefore appear to be structural and long term. It is not surprising that several major investors in container shipping (e.g. Safmarine, Sea-Land etc.) have been driven from the industry in 1999 partly as a result of the long-term record of inadequate returns. As customers persist in demanding and obtaining lower freight rates, few possibilities appear to exist for carriers to try and secure improved returns. However, potentially successful strategies may involve:

- ❑ Greater concentration of ownership of container shipping lines;
- ❑ Long term, confidential, global contracts between shipping lines and their customers;
- ❑ Carriers to develop a completely different kind of relationship with shippers that positions them as an indispensable link in their customers' global supply chain.

With carriers struggling to differentiate themselves and the services they provide, a key issue has been whether container shipping is becoming a commodity business, in which the only way carriers differentiate themselves is through price. Alliances alone make it difficult for carriers to maintain differentiated services or engage in serious branding, and this means that lines

will need to do much more if they are to achieve desired levels of profitability. Meeting more comprehensively the changing supply chain needs of shippers could offer improved prospects, and this issue is discussed in the following section.

3.6 Shippers

3.6.1 Shipper requirements

Container lines serve a very wide customer base therefore customer demands must represent a key consideration in the development of strategy. In a survey of European and North American shippers, Brooks (1995) sought to establish whether or not customer needs varied by customer type and geographic location. Brooks study involved a total sample of 300 shippers made up of large shippers, small shippers (defined as firms shipping 6-15 TEU annually), consignees, and freight forwarders. A range of carrier attributes was established and shippers were asked to rank each one in order of importance. These criteria, which are not necessarily in order of importance, are shown in Table 3.12. Key findings from Brook's study included:

- ❑ Shippers overall requirements are dynamic - they change over time;
- ❑ Shippers regarded freight rates as a top priority; and
- ❑ On-time pickup and delivery of goods was also rated highly important, however, transit time did not prove to be a highly significant factor.

These finding suggested that carrier differences were perceived not to exist. However, it could be argued that transit time may have been perceived to be less important only so long as the goods arrived on time. Ultimately, of course, ensuring that goods do arrive on time is actually dependent to a large degree

upon transit time, which rather suggests, contrary to Brooks conclusion, that transit time is a significant factor.

Table 3.12 Carrier attributes required by shippers

Cost of service (rate)

The core service

Transit time door-door
Availability of equipment
Weekly fixed day departure

Measurable attributes of the core service

On-time pickup and delivery
Consistent timely pickup and delivery
Quality of equipment
Timely quote
Timely arrival notices
Accuracy of bill of lading production
Accuracy of invoicing

Service delivery

Problem solving capability of carrier personnel
Telephone satisfaction
Professionalism of the sales personnel
Professionalism of the driver

Source: Brooks (1995) Understanding the ocean container market - a seven country study. *Journal of Maritime Policy & Management*, Vol. 22, No. 1, pp.39-49.

While Brooks established important aspects relating to shipper requirements, her survey did not include shippers in Asia or on North-South routes. The industry trade journal *Containerisation International* has undertaken two worldwide surveys of shippers priorities, first in 1992, and more recently in 1995. In the 1992 survey (Damas, 1992), questionnaires were sent to more than 3,000 shippers in some 30 different countries primarily throughout Asia, Europe and North America, and covering the main East/West and North/South trade lanes. Although there was a relatively low response rate to the survey of 7 per cent, the shippers who did respond controlled an estimated 400,000 TEU per annum. Shippers were defined as small (i.e. shipping less than 200 TEU per

annum), medium (200-800 TEU per annum), or large (over 800 TEU per annum). Key findings from this survey included:

- ❑ More than 80 per cent of shippers were satisfied with service reliability;
- ❑ Two-thirds of all shippers (but 76 per cent of large shippers) were dissatisfied with tariffs, more especially with conference tariffs, with many preferring an all-in fixed rate rather than the complex selection of Terminal Handling Charges (THC's), Currency Adjustment factors (CAF's), Bunker Adjustment factors (BAF's) etc. which were also subject to frequent revision by the lines;
- ❑ Non-conference lines were apparently able to guarantee all-in fixed (FAK – freight all kinds) box rates;
- ❑ Price was constantly one of the principal deciding factors for three quarters of all shippers, with short transit times, service reliability, and frequency also pre-eminent;
- ❑ 53 per cent of larger shippers expected a partnership arrangement with carriers and these shippers were also much more demanding and generally more dissatisfied with the level of service provided by carriers; and
- ❑ Large shippers moving in excess of 1,000 TEU per annum were far more likely to need individual value-added services (e.g. warehousing, packaging, freight forwarding etc.). 36 per cent of shippers in this category required value-added services compared with 19 per cent overall.

The 1992 *Containerisation International* survey found that larger shippers have different requirements from smaller shippers, particularly with regard to the need for lines to build partnerships with shippers, and to provide value-added services. The issue of an all-in FAK rate must also be considered as

important for lines, and transit time, unlike in Brook's findings, was considered by shippers to be important. An area where both studies were in agreement concerned the issue of service price, which was regarded as a key, if not *the* key decision variable.

The second and more recent *Containerisation International* global shipper survey was carried out in 1995 (Eller, 1995). In this survey 900 questionnaires were sent to shippers in Europe, North America, and Asia, from which 152 replies were received (a 17 per cent response rate). The key findings from this survey included:

- ❑ When selecting ocean carriers, shippers were looking for overall cost, service, and reliability packages, rather than being concerned with individual considerations such as freight rates or service reliability;
- ❑ Only 12 per cent of respondents viewed negotiating the lowest possible rate as the most important consideration whereas 80 per cent indicated that rates form part of overall service packages;
- ❑ 30 per cent of shippers considered sailing schedule reliability to be of supreme importance, with 64 per cent regarding this as part of overall service packages;
- ❑ 75 per cent of shippers considered the widest possible port coverage and overland intermodal capability also to be part of an overall service package;
- ❑ 75 per cent of shippers deemed conference membership by carriers to be irrelevant, and the same proportion also viewed a carriers' flag as being irrelevant; and
- ❑ Nearly 40 per cent of shippers considered a carrier's IT capability to be of supreme importance.

Evidence from the 1995 survey suggests that, far from being just one or two service priority aspects, shippers actually require an overall service package from carriers. This overall service package must combine attractive rates, sailing schedule reliability, wide port coverage, intermodal and IT capability, and increasingly, multi-trade or global capability (especially for large shippers seeking to reduce the number of suppliers they use). The study concluded that pleasing a shipper on all of these counts would give a carrier a greater chance of success.

The reality of poor carrier profits in an industry lacking differentiation, appears at odds with a requirement from many shippers for what could be defined as 'customised service packages', in which price is part of the overall package rather than the overriding factor. Clearly, the challenge for carriers is to design such customised service packages which on the one hand fully meets the needs of the customer, yet on the other hand can deliver satisfactory profits.

3.6.2 Global contracts

Larger global shippers are increasingly seeking to source from fewer suppliers overall, with preferred suppliers working for them on a global basis (Cooper, 1993). This trend is just as relevant for providers of transport services as it is for suppliers of product components. As a consequence of this, and also as a result of carriers having developed extensive worldwide transport networks, global shippers are now demanding global contracts with container lines.

A global contract in liner container shipping can be defined as one overall contract containing all the services, volume commitments, and contractual clauses that govern a multi-trade relationship between a carrier and a shipper. There are a number of supposed benefits for carriers and shippers associated with such global contracts, most notably (Damas, 1996):

- Fewer lines to deal with which in turn minimises the amount of time a shipper needs to spend on administration and negotiation thus reducing transaction costs;

- ❑ Stability of cargo volumes and freight rates. For the line, large cargo volumes are secured over a longer time period and level of income is known for the same period. For the shipper transport costs are fixed for a lengthy period;
- ❑ An enhanced interest in the other party because of higher volume commitments. This allows for improved service levels and creates the possibility to engage in joint cost-saving programmes;
- ❑ Ease of communication, mutual understanding, transparency and a higher level of trust helps to create a new shipper/carrier relationship;
- ❑ Stronger negotiation leverage for shippers. Aggregating the volume from all its subsidiaries worldwide gives a large shipper significant leverage with carriers when negotiating a global contract, resulting in lower rates, particularly on trades where an otherwise large shipper may only move minimal volumes;
- ❑ Effectiveness of a 'worldwide tenders' system which allows shippers to compare the best overall service packages from the world's leading carriers, and;
- ❑ Easier monitoring of carriers, especially of their quality performance.

To some extent global or multi-trade contracts could simply be regarded as a formula invented by shippers to secure lower rates. However, for conference carriers, global contracts as defined above did not exist as under the 1984 US Shipping Act it was illegal to have a global service contract covering the scope of several conferences; within a conference, a carrier could only have a contract covering the scope of the conference. This meant that a non-conference carrier such as Evergreen Line could provide a global contract, while a conference carrier such as Sea-Land could not. For the latter, a global contract was effectively a series of parallel contracts or rates in different trades or conferences

for one shipper. Deregulation brought about after introduction of OSRA in 1999 has meant that this restriction no longer exists, which means that all lines, whether conference member or not, can offer global contracts.

While the present regulatory system has therefore improved the potential for global contracts, there are still a number of practicalities which actually hinder their implementation, including:

- ❑ Many shippers still prefer to work with a small select group of carriers and would rarely contemplate allocating their entire freight to a single carrier in any one trade;
- ❑ Spreading cargoes among carriers gives shippers rate stability and guarantees of space and equipment availability, something an exclusive global carrier might be unable to ensure;
- ❑ Many so-called global carriers only provide a limited coverage of the many North/South trades which means that shippers still have to shop around and find niche carriers to fill the gaps in their global transport needs. However, as global carrier alliances continue to extend their reach into new markets, these geographical gaps are likely to lessen; and
- ❑ If a line had to accommodate the entire business volume of major shippers on certain trade lanes, it may have problems with vessel capacity and equipment.

Administratively, finalising a global contract requires individual carriers to come to the negotiating table as a “global negotiating team” with full authority or as a group of trade managers, each one having to cooperate with corporate colleagues (Eller, 1994). A number of carriers have now established global negotiating teams, partly at the insistence of global shippers. However, this still means that annual negotiations on global contracts are a major process, requiring the building of a matrix showing (a shipper’s) traffic flows for every

region or factory and aligning these flows with individual carriers on each respective trade lane. A shipper also needs to bring together its managers from around the world, annually, to review company data and prepare global contracts.

Setting up global contracts and working out all the necessary information on a worldwide basis clearly involves a significant investment in time and management for both shippers and carriers. For both shippers and carriers, it will be important to ensure that the costs involved in such an exercise do not exceed the benefits.

3.6.3 Shippers' Councils

While individually many large shippers can use their total annual traffic volume to leverage pressure on carriers for rate reductions and improved service levels, many small and medium sized shippers have also been able to exert a degree of influence over carriers through membership of Shippers' Councils. Shippers' Councils are national organisations, usually created and run by transport users or shippers. Their role and scope may vary considerably from one country to another, but they all share a concern for the efficiency and adequacy of transportation markets (Sletmo & Holste, 1994). Shippers' Councils are believed to have two important purposes (UNCTAD, 1975):

- The prime purpose....is to unite shippers and to give them the necessary bargaining strength to obtain adequate and efficient services at minimum cost; and
- To provide shipowners, government agencies and port authorities with a means of communicating with shippers, and of obtaining an authoritative shipper viewpoint.

Functions commonly carried out by Shippers' Councils include consultation with conferences, input into international policy, and preparation of relevant publications. In the USA, however, Shippers' Associations fall into a slightly

different category as their objective is strictly commercial, i.e. the negotiation of contracts on behalf of their members to obtain volume discount rates.

Some governments, notably in certain Asian countries, actually empower Shippers' Councils to regulate the shipping business. In Thailand, for example, the Thai National Shippers' Council (TNSC) was established by Act of Parliament as recently as 1994 (Turner, 1996). This Act made it compulsory for all Thai businesses with annual exports exceeding \$2 million to become members of the TNSC, whose current membership stands at around 2,000. The TNSC was created amid concern that carriers tended to impose rate increases and other surcharges at short notice and to the detriment of exporters with fixed price contracts. The Act permits the TNSC to consult with ocean carriers on such issues. The Act also makes it mandatory that all carriers serving Thailand must register their tariff rates and conference or alliance agreements. There are penalties for failing to comply with these requirements, the ultimate penalty being exclusion from engagement in Thailand's ocean trade.

Although the original focus of Shippers' Councils concerned the relationship between buyers (shippers) and sellers (liner conferences), many Shippers' Councils today appear to attach increasing importance to providing input into the political process and acting as lobby groups. This is particularly the case with large regional shippers' councils which have been formed, such as the European Shippers' Council (ESC), the Federation of ASEAN Shippers' Councils (FASC), the Japan Shippers' Council (JSC), and in the USA the National Industrial Transportation League (NITL). In 1994, the ESC, JSC, and NITL met in Brussels to sign a joint declaration establishing four common principles:

- ❑ That industry and commerce in the three main trading regions have common interests as users of ocean liner services, even though they are competitors;
- ❑ That shipping services are competitive, by being subject to the normal forces of supply and demand;

- That shippers require flexible and clearly understandable pricing mechanisms. This means rates based on genuine commercial principles, but which also meet all categories of transport user; and
- That shippers want to cooperate with shipowners/operators to help modernise services and business procedures.

These large regional Shippers' Councils are predominantly anti-conference and successfully pressed for deregulation in the USA to allow individual shippers to negotiate confidential contracts with carriers without conference approval. In future, the councils' argue that agreements between shippers and carriers should have sufficient flexibility to be conducted on a port-port, point-point, or global basis. The council's now meet on an annual basis to exchange information and to cooperate on matters of common interest.

3.7 Summary

In offering a macro perspective of the container shipping industry, this chapter has considered world container trade, the structure of the container shipping industry, the nature of competition within the container shipping industry, and the requirements of shippers. The essential objective of chapter 3 has been to outline and identify important aspects of the industry, and to establish what may be regarded as the key supply and demand factors and influences which will impact in one way or another on the strategies of competitors in the global liner container shipping business.

Liner container shipping has clearly played a critical role in helping to facilitate the expansion of world trade and it is estimated that over 60% of all world trade by value is now containerised. The three dominant world economic regions of Asia, Europe, and North America collectively account for 90% of all container flows (East-West and Intra Regional).

Some 20 carriers control over half of all container ship slot capacity currently in service. Most of these top 20 lines participate within one of several separate global alliances, each offering an extensive (in some cases global) service network. Larger shippers in particular are increasingly demanding global services from their transport providers, hence the need for liner operators to develop global networks is primarily in response to customer demand.

However, operating consolidation has not necessarily resulted in commercial consolidation, the result being that most trades remain fragmented with each alliance member still functioning as a separate commercial entity. This means that shippers have a wide choice of carrier, and it also means that competitors within alliances compete for the same business, to fill the same slots, on the same ships, perhaps even using the same containers. A key challenge for lines' is therefore to overcome the lack of differentiation between them. Carriers are now increasingly seeking to offer a 'superior intermodal service' on a global basis in an effort to gain competitive advantage. A superior service is considered to include elements such as fast transits, multiple service options, frequent service, extensive intermodal capability on the landside, and value-added activities, supported by advanced information systems.

Coinciding with this change in carrier approach, shippers are increasingly demanding an overall service package from lines which includes aspects such as acceptable cost, service quality and coverage, and reliability. This is especially so with larger shippers sending goods between subsidiaries on a worldwide basis.

There are clearly advantages and disadvantages associated with global shipper/carrier contracts, but the fact remains that carriers must go where global shippers want them to go, as failure to do so may mean loss of business. Many small and medium-sized shippers represented by Shippers' Councils are also able to exert strong bargaining power over lines. Shippers' Councils have been actively campaigning against conference 'cartels', advocating the removal of surcharges, and the introduction of confidential contracts between a line and its customers.

Protection for lines within the traditional liner conference system has been severely weakened through the *countervailing powers* of government regulation, Shippers' Councils, global shipper bargaining power, and by the introduction of new services by 'independents'. To a large extent conferences have now been usurped by new-style carrier alliances, either global or trade-specific.

Deregulation in the USA through enactment of OSRA has eased the way for global contracts and also allows for confidential contracts. However, differences still exist between regulatory regimes. While the EC, like the US, allows conference members to jointly set prices, the EC does not permit joint pricing on inland transport, unlike the US. Moreover, there is increasing evidence that certain Asian countries may introduce new regulations for liner shipping. In an effort to provide for fair competition, and protect consumers, a possible global solution may be for a single body such as the WTO to work towards harmonising regulations for the container shipping industry.

CHAPTER 4

STRATEGIC MANAGEMENT IN GLOBAL INDUSTRIES

4.1 Introduction

The container shipping industry is one of the critical enablers of globalisation: containerisation *permits* globalisation of industry to happen (Cafruny, 1987). The container itself is a global homogenised product - a standard ISO container is nowadays just as likely to be seen in an African or South American city, as on the streets of New York, Hamburg or Tokyo. Standardised systems (e.g. ports, highways, railways etc.) are in place globally to allow this.

It is the strategies of global shippers that are driving container lines towards providing sophisticated global container transportation systems. A consequence of this is that wherever there is economic growth, there is evidence of increasing container traffic.

This chapter provides a review of the literature relating to the reasons behind industry globalisation, and the implications for management and business strategy. More specifically, it seeks to address several important issues including:

- ❑ What leads firms to become global?
- ❑ What pressures do global companies face?
- ❑ What are the organisational implications of a global strategy?
- ❑ How does a firm reconcile the dilemma of global operational integration, with the need to maintain a sufficient degree of customer responsiveness at the local level?
- ❑ How is it possible to identify and analyse, for a given industry, the pressures for global operational integration and for local responsiveness to diverse market needs?

4.2 Competing internationally

Firms internationalise for a number of reasons but the fundamental reason is to enhance the firm’s overall competitive position (Dicken, 1998). The decision to internationalise is a major *strategic* decision and the very fact of operating across national boundaries provides added complexity.

4.2.1 Generic strategies

Michael Porter (1985, 1986) has developed some of the most influential ideas on a firm’s competitive strategy. According to Porter, business firms seek to achieve a competitive advantage in their particular industry through the pursuit of one of three ‘generic strategies’ (Figure 4.1):

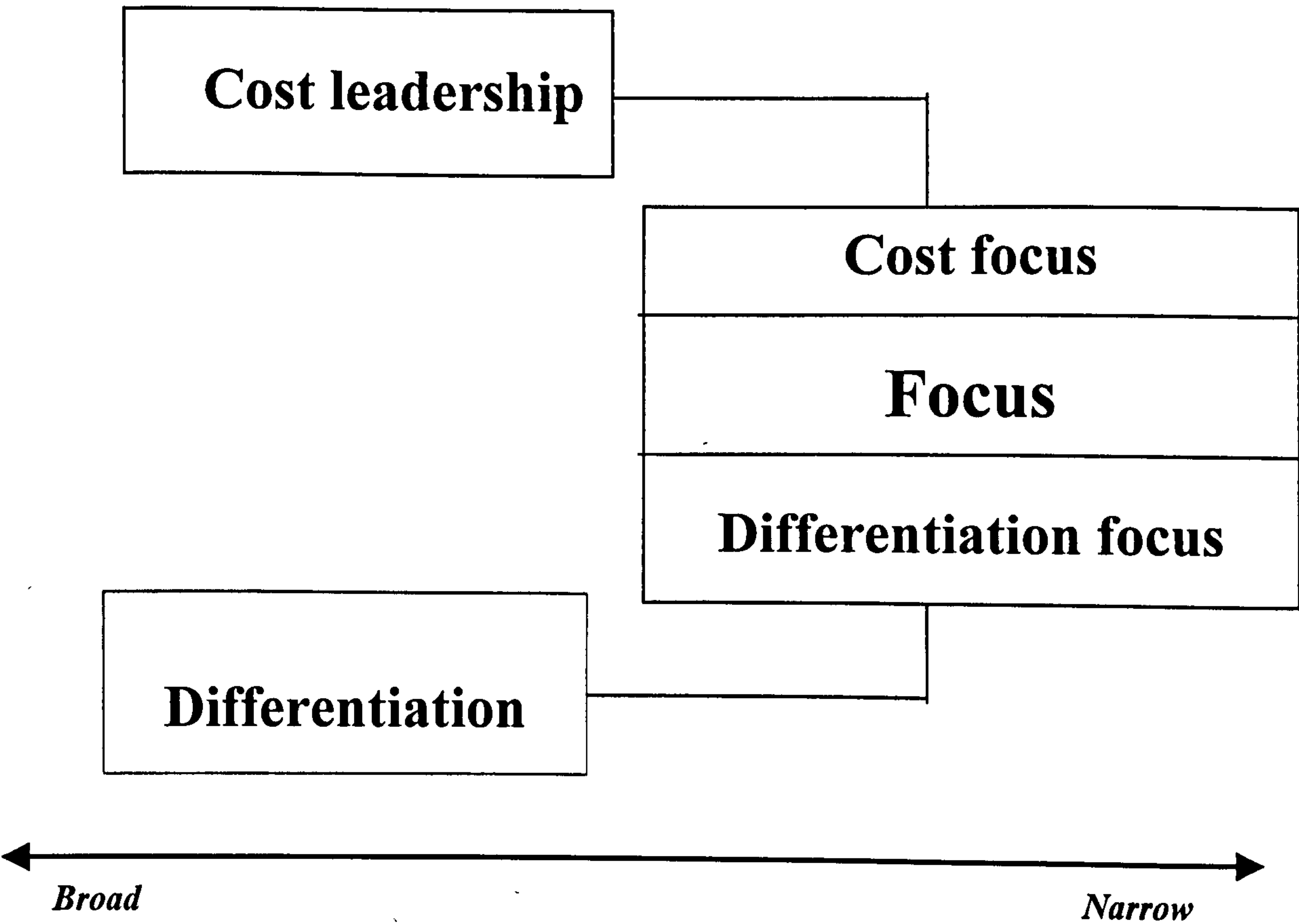


Figure 4.1 Porter’s classification of ‘generic’ competitive strategies

- ❑ *Cost leadership*: being the lowest cost producer of a good or service;
- ❑ *Differentiation*: being different from competitors in some way or other;
- ❑ *Focus*: applying either of these two strategies on a broad or a narrow front. The latter is generally known as a *niche* strategy and may apply to a specific geographic market, a particular segment of a production process or a particular type of customer.

4.2.2 The Value Chain

A key question relates to the type of international strategy best suited to a particular industry. To diagnose and understand the sources of competitive advantage, it is necessary to adopt a disaggregated view of the firm's activities, which Porter calls the *value chain* (Porter, 1986: 19). Every firm is a collection of discrete activities which Porter refers to as value activities, although others use the term *production chain* (Dicken, 1998). Porter grouped the activities performed by a firm in any industry into nine generic categories (Figure 4.2).

Support Activities	Firm Infrastructure					
	Human Resource Management					
	Technology Development					
	Procurement					
	Inbound Logistics	Operations	Outbound Logistics	Marketing & Sales	Service	Margin
Primary Activities						

Figure 4.2 The Value Chain (Porter, 1986: 21)

A key difference between Porter's value chain and the production chain is that the latter takes into account external environmental factors such as financial and regulatory systems. Porter sought to compensate for this through development of his *competitive forces* framework. In this study it is recognised that using one single framework may be unlikely to offer sufficient explanation on its own for a particular phenomena and that, consequently, two or more theoretical frameworks could be applied depending on the extent and purpose of analysis deemed necessary.

However, several aspects render Porter's value chain problematic for analysis of the global container shipping industry:

- ❑ The terminology and emphasis is biased towards manufacturing rather than service industries;
- ❑ It is uncertain under what category to analyse particular industry issues (e.g. trade agreements between container lines, service networks);
- ❑ Whilst the framework is useful for analysing some elements of strategy, it ignores specific strategic choices available to, and pressures faced by industry competitors, particularly with regard to key issues such as global operational integration and the need for local responsiveness to meet diverse local market needs.

4.2.3 Globalisation pressures

A number of significant changes during the past three decades have led to the globalisation of economic activity, bringing with it pressures on firms to alter the way they compete. The lowering of trade barriers (particularly through successive rounds of GATT agreements) and the revolution in international transport (notably the impact of containerisation, international jet air travel, and worldwide telecommunication linkages), meant many companies were able to treat the world in a much more integrated manner (Bartlett, Doz & Hedlund, 1990; Cooper, 1993). These factors were reinforced by a new wave of

competitors, particularly from Asia, who capitalised on falling tariffs and efficient global distribution to leverage their country-specific comparative advantages.

By the end of the 1980s the economy of the developed world had become dominated by three trading blocs - Western Europe, North America and the Pacific Rim. Between them these regions accounted for over 75% of the world's output and trade and their companies accounted for over 80% of all international production (UNCTC, 1991). This virtually mirrors world container traffic flows as discussed in Chapter 3.

Other factors accelerating the globalisation process included a rapid growth of financial markets, the explosion of international mergers and acquisitions, and a trend for large companies to be less dependent on the health of any one nation's economy (Emmerij, 1992). A more open trade environment has made global sourcing possible, leading to the emergence of global customers demanding consistent price, quality and service at all their locations worldwide (Porter, 1986).

There has also been an acceleration in the emergence of new technologies (e.g. pharmaceuticals, electronics) which increasingly demand global sales volumes in order to fund and recoup the necessary research and development costs. The ability to coordinate an organisation's activities in different countries has also been facilitated by growing similarities among the developed countries in marketing systems, business practices and infrastructure. These pressures have inevitably led to changes in the strategies and structures of international companies.

4.2.4 Capital in global industries

MNC's must exploit the benefits of their international scope to match their competitors' costs of capital and effective rates of taxation. The structure of external financing has become more global, shifting from primarily home currency borrowing at the parent level and local currency borrowing on the part of foreign subsidiaries, to a more complex pattern which recognises the interaction between minimising taxes, exploiting financial incentives and

distortions in financial markets, and offsetting exchange rate exposures (Lessard, 1986).

Factors influencing a MNC's cost of capital include: national capital market structure, national tax policy, national systems of corporate governance as well as project-linked financing opportunities (Baldwin, 1986). At the national level, competitive forces of supply and demand determine the cost of capital within the marketplace. However, a dramatic development over the past few decades has been the integration of world financial markets into one global 'supermarket'. Global corporations are particularly well positioned to gain access to this market (e.g. P&O has raised capital in Hong Kong, New York and Tokyo).

Global container lines have also benefited from host government financial incentives. By constructing ships in Denmark, Maersk Line enjoys tax advantages in the form of attractive depreciation allowances. Lines chartering vessels from German owners indirectly benefit from the KG tax system. Lines have also taken advantage of public bodies financing new port infrastructure and then entering into a joint venture, with lines contributing less finance than would otherwise be the case (e.g. Evergreen at Taranto, Maersk/Sea-Land in New York and Aden).

Although global corporations have the capability to scan locations in order to determine the most productive match of resources and activities, they themselves are being scanned by increasingly sophisticated international providers of capital. There is also a tendency for capital in all markets to be driven towards a common global standard. This implies a need for global corporations to identify earlier potential advantages to be gained from specific configuration of its various value activities. In global container shipping, as in any other global industry, the corporation needs to have full knowledge of its opportunities, and thus seek to lower the cost and increase the efficiency of the capital it deploys.

4.3 International strategies

4.3.1 Multidomestic strategy

During the early decades of the twentieth century European MNC's such as Unilever, Philips and Nestle played leading roles in the development of foreign direct investment and the setting up of overseas subsidiary companies. Distance, protectionist policies and communication difficulties inevitably meant that these overseas subsidiaries were allowed a high degree of strategic and operating autonomy; as a result they pursued country-centred or "multidomestic" strategies (Porter, 1986).

A multidomestic strategy is mainly relevant in industries where a firm's overseas subsidiary can compete effectively by performing most of the functions in the value added chain within a single foreign country (or small group of countries). Competition in each country is essentially independent of competition in other countries - competition occurs on a country-by-country basis and competing internationally is discretionary. Such a company will only expand internationally if its management believes that it has some advantage that allows it to overcome the extra costs of entering and competing in foreign markets.

Once it has set up in a foreign country the firm builds its competitive advantage by responding to the local needs and wants of customers in that country, i.e. by adapting its products and/or services to suit local tastes and to fit market structures such as local channels of distribution, communications media and local laws, regulations and standards (Prahalad & Doz, 1987). These pressures for local responsiveness may also be enhanced by high tariff barriers aimed at discouraging imports and encouraging sourcing from indigenous industries.

Typically, the firm's subsidiary will adapt its products/services and activities in a manner that is relatively independent of its parent organisation or of other subsidiaries within that organisation. There is no competitive advantage to be gained from coordinating activities across subsidiaries. In the early years, these organisations tended to be run as "decentralised federations" (Bartlett &

Ghoshal, 1989). The role of the group head office in the home country would be limited to the appointment of senior managers to subsidiaries. Such interactions were the inevitable response to an era when international transport and communications were costly and unreliable and national markets were highly differentiated.

In spite of the obvious benefits of responsiveness to local market requirements, a multidomestic strategy has some equally obvious disadvantages:

- ❑ Economies of scale are limited by the size of the local market so production costs may remain high;
- ❑ Concentrating attention on the local market may blind managers to developing trends in the wider world; and
- ❑ It may also discourage cooperation with and learning from affiliated companies elsewhere in the same group.

These factors can lead to unnecessary costs and delays in the introduction of new products and/or technology and the consequent loss of market opportunities to more quick-footed competitors. In recent years these competitors have generally been ones operating on a global basis, i.e. Japanese automobile manufacturers, and American electronics companies. Nevertheless, multidomestic strategies can still be identified in some industries, such as processed foods and retailing, where national tastes predominate and traditional business practices or government regulations or constraints persist (Doz & Prahalad, 1984).

Each of Porter's three generic competitive strategies applies to all firms regardless of the geographical extent of their operations. At the international or global scale, however, such competitive strategies take on an additional dimension in that:

“Industries may vary along a spectrum from multidomestic to global in their competitive scope.”

(Porter, 1986: 17)

Figure 4.3 summarises the basic features of industries at each end of this spectrum. Until the 1960s most MNC's pursued a multidomestic (or nationally responsive) strategy in their international operations, whereby autonomous national subsidiaries served individual national markets (Dicken, 1992). The essence of a multidomestic or nationally responsive competitive strategy is an international network of commonly owned, but quasi-independent, operations, each responsive to the characteristics of individual national markets.

While such multidomestic strategies are still very common among MNC's, a growing number of mainly larger corporations have developed *globally integrated* competitive strategies. Technological changes in transport and communications, in the production process, and in the organisation of production, together with international convergence in market characteristics, have increased the benefits to be gained from operating at very large scales.

However, dividing industry strategies into these two polar opposite types would be an over simplification of reality. It suggests two mutually exclusive strategic orientations: global integration on the one hand and national responsiveness on the other. In reality, each contains elements of the other.

Firms operating in so-called multidomestic industries (e.g. container lines serving intra-Asia trades) must take account of global forces (e.g. global carriers 'wayporting' (i.e. shipping cargo between Asian markets) when their ships transit Asia en-route to Europe or North America, or demands from shippers for global service contracts). Conversely, firms operating in global industries must be responsive to national and local differences (e.g. different port working practices, local agency laws, container weight and size limits, container types, seasonal impacts on trade flows etc.). This means that intensification of global competition in a world which still retains a high degree of local differentiation creates, for all MNC's, an internal tension between *globalisation* forces on the one hand and *localisation* forces on the other.

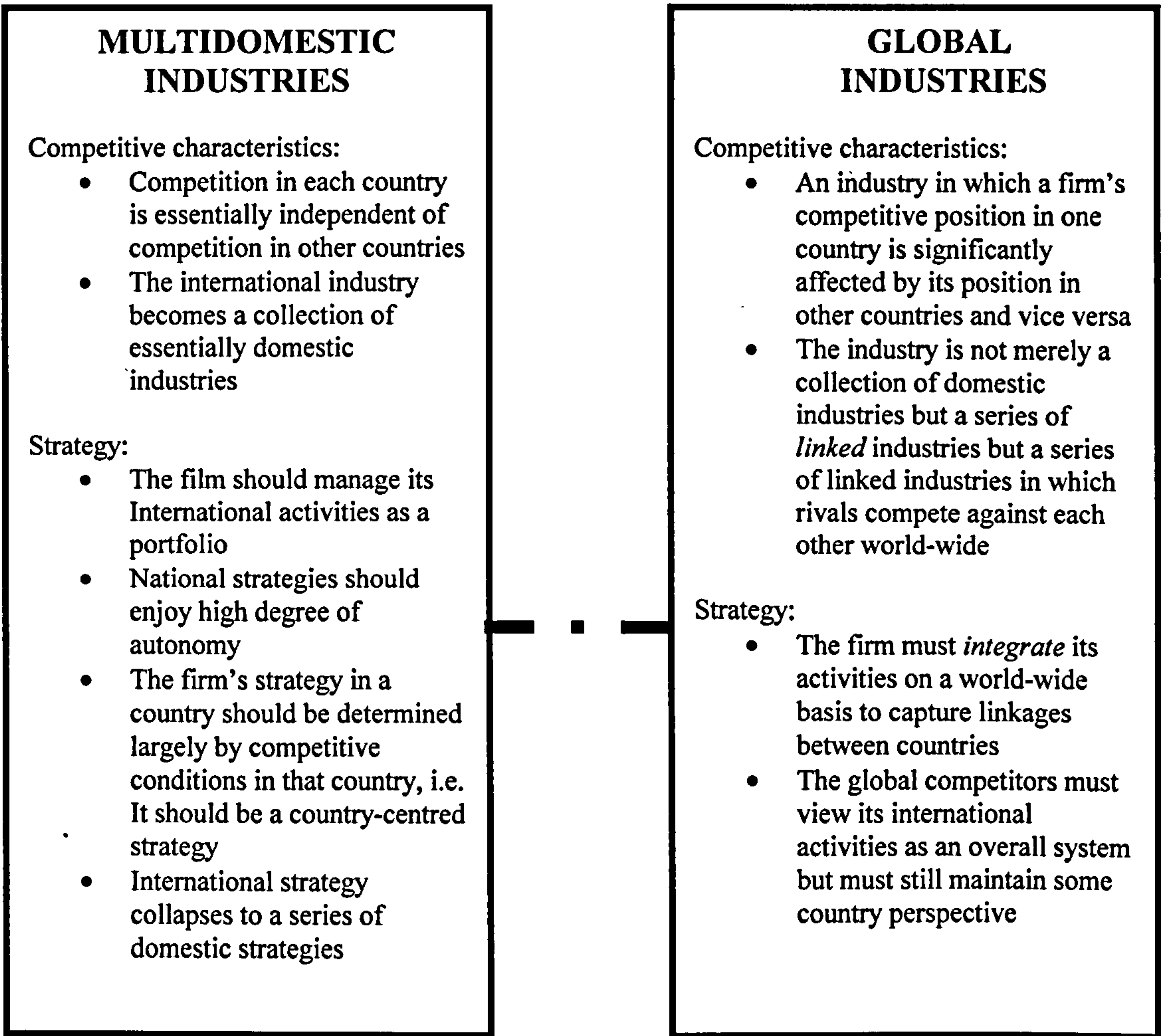


Figure 4.3 Competitive and strategic characteristics of multidomestic and global industries (Source: based on material in Porter, 1986, Chapter 1)

4.3.2 Global strategy

The essence of a global strategy is the ability to regard the world (or the most significant regions of it) as a single market. This implies an increasing homogenisation of consumer tastes across the world and the ability to produce and sell a standardised product in response to such tastes. It also implies the ability to compete effectively on a worldwide basis.

It is argued (e.g. Hout, Porter & Rudden, 1982; Porter, 1986) that the international firm pursuing a global strategy will search for competitive advantage by locating its activities in the best (and in the optimum number of) locations worldwide, and it will seek to manage those activities as

interdependent members of a single system, not as a portfolio of independent businesses. In this sense 'strategy' may mean either organic growth, acquisitions, alliances, or a mixture of these. Success in these areas should deliver the essential benefits of a global strategy, which include low cost and high efficiency.

Low cost can be delivered through economies of scale in production, logistics and/or marketing. In container shipping there is evidence of this in terms of increased ship size, and in larger vessel and container fleet orders. It can also be delivered through economies of scope such as the sharing of physical assets (e.g. terminals), brand names and/or external relations across different businesses and markets (e.g. mergers between lines has reduced costs associated with local representation – one local office instead of two). However, greater efficiency may depend on the ability to transfer, share and develop knowledge, expertise and experience from one part of the organisation to others on a worldwide basis (Prahalad & Hamel, 1990). The implication is that this has to be done by centralising the organisation's decision-making process to ensure effective control over the whole complex system.

It has been argued (Kobrin, 1991) that the key pressure encouraging global integration has now become technological intensity - primarily measured in terms of R&D expenditure and the increasing cost of process technology. Kobrin sees one of the most obvious manifestations of this trend as the emergence of international strategic alliances between very large MNC's from advanced industrial countries; container shipping appears to offer a classic example of this as lines collaborate in order to share costs associated with constant upscaling. Others (Harrigan, 1987; Contractor & Lorange, 1988) also list high, risky investment requirements and rapid technological change as important causes of the increase in international alliances and partnerships.

As well as low cost entry and risk-sharing, alliances can provide fast access to new markets, by 'borrowing' the already-in-place infrastructure of a partner (Doz, Prahalad & Hedlund, 1990). For example, alliances between Asian and European lines enabled the former to access terminal facilities and intermodal connections previously put in place by their European partners. Global

competition can also highlight asymmetries in the skill endowments of firms. Essentially, collaboration may provide an opportunity for one partner to internalise the skills of the other, and thus improve its position both within and outwith the alliance (Contractor & Lorange, 1988). In the Maersk/Sea-Land alliance, Maersk benefited from Sea-Land's extensive terminal and intermodal capabilities, whilst Sea-Land sought advantages from Maersk's vast shipping fleet and more extensive global network of routes.

However, firms that want the edge an alliance can provide must cope with a host of constraints, from nationalism to cultural differences to antitrust attitudes. Many firms have difficulty sustaining long-term relationships (Perlmutter & Heenan, 1986). Cultural differences, poor communication, and political infighting may lead to the demise of a strategic partnership. Corporate partnership is difficult to achieve, especially where it involves diverse backgrounds and cultures. An atmosphere of mutual distrust or domination by one partner may jeopardise the stability of an alliance and two corporate cultures will not always mesh well or smoothly (Ohmae, 1989). In container shipping, the alliances that seem to work best occur where lines have had some dealings with each other over a long period, perhaps within a liner conference. For example, P&O and Nedlloyd, Maersk and Sea-Land, and Neptune Orient Lines (NOL) and American President Lines (APL), had all been working closely together prior to their subsequent mergers.

4.4 Factors leading to globalisation

From case study research into several industries, Cvar (1986) identified two particularly significant factors leading to industry globalisation:

- ❑ Homogeneous demand, and;
- ❑ Susceptibility to scale economies.

4.4.1 Homogeneous demand

Cvar (1986) found that most global industries were characterised by a significant level of demand for standardised products. Container shipping provides a good example of this as containers are standardised worldwide to ensure effective handling by ships, within terminals, and through use of intermodal connections. Cvar also notes that, as economic circumstances have converged (a container shipping example being the growing level of technological sophistication in most seaports around the world), so the demand for standardised products has expanded.

4.4.2 Susceptibility to scale economies

Cvar (1986) also found that the value or production chain in global industries tended to include activities that were highly susceptible to scale economies, thereby allowing a cost advantage from global configuration. The tremendous size economies in container shipping have been investigated by a number of writers, especially in recent years due in part to the dramatic increase in ship size, with the largest vessels now capable of carrying upwards of 8,000 TEU (e.g. Lim, 1994; Cullinane & Khanna, 1999; Gilman, 1999). Scale effects are also demonstrated in other ways, for example through the greater purchasing power of global lines and alliances with respect to new ships, container purchases, port facility charging, and intermodal suppliers.

In regard to ship economies, Gilman (1999) notes the improvements in stowage efficiency for larger ships, partly due to reduced engine weight, and smaller crew and accommodation deck which have the effect of reducing ship lightweight (i.e. weight of unladen ship), allowing more cargo to be carried. However, Gilman suggests that economies of scale in ship size diminish due to the extra time taken to load and discharge larger vessels in port, and that consequently carriers should keep ship size to under 10,000 TEU.

So, whereas potentially there are significant economies of scale to be earned from operating larger ships as opposed to small, the overall efficiency of a ship depends ultimately on the total time it takes to complete a voyage, including port time which is a function of the cargo handling rate (Cullinane & Khanna,

1999). As Jansson & Shneerson (1987) point out, the aggregate economic position vis-à-vis economies of scale in the containership sector represents a trade-off between the positive returns earned at sea, and the negative returns accruing while in port.

4.5 Criticisms of the multidomestic versus global distinction

4.5.1 Diversity of markets

The essence of a global business strategy is frequently claimed to be improved efficiency (Hout, Porter & Rudden, 1982; Levitt, 1983). The world is increasingly viewed as a single market in which consumers with homogenised tastes will accept standardised products, and these global products will yield immense economies of scale in production, logistics and marketing. However, a number of writers (e.g. Kogut, 1985; Douglas & Wind, 1987) warn against the oversimplification implied in such views. They argue that there is actually evidence of an increasing diversity of behaviour within countries, that companies must adapt product lines to idiosyncratic country preferences, and that many countries are characterised by substantial regional differences, as well as different lifestyle and value segments. Indeed, it has been suggested that in some industries (e.g. food processing) national-focused companies have been more profitable than their global competitors (Baden-Fuller & Stopford, 1991).

Kogut (1985) suggested that the distinction between standardised and differentiated products may be misleading. For example, marketing can be highly differentiated by country and market segment, but can still exploit upstream competitive advantages such as low cost production. A major task of the international marketing function is therefore to differentiate products that embody the shared or distinctive competence of earlier links in the value-added chain. Container lines serving the same markets may try to differentiate their 'product' by offering faster 'express' services than their competitors or indeed faster than their own normal service linking the markets in question. For example, Evergreen Line offers customers a choice on some routes of an

express direct service (e.g. Singapore-USA), or the slower transit (and cheaper) Eastbound Round-The-World service which calls at several other ports in Asia before heading across the Pacific. Each type of service is therefore geared towards a different customer segment.

4.5.2 Flexibility of functional delegation

Bartlett & Ghoshal (1987; 1989), using the example of Unilever in the 1970s and 1980s, describe how that company had to respond to competitive pressures to increase standardisation, coordination and integration in its detergents business worldwide, but not in its processed foods business. But even though the head office decided to manage its detergents subsidiaries in a more globally coordinated manner, it still had to decide what to coordinate. The benefits of coordinating R&D, for example, were greater than those of coordinating marketing and sales. And inside the marketing function there were more benefits from coordination in the fields of product policy than in promotional activities. Bartlett & Ghoshal (1989) concluded that in MNC's a degree of flexibility is required in the approach to functional delegation and organisational issues. Thus, it may well be the case that there will be difficulty in defending a competitive position by responding uniformly to a single dominant pressure such as that for global coordination and responsiveness.

Innovation and new product development are seen as increasingly important to international competitiveness. According to Grant (1991), this poses a dilemma for top management, as the generation of product or process innovations may be best fertilised by a high degree of decentralisation which encourages creativity and participation throughout the organisation. Conversely, the effective introduction of innovations around a globally spread organisation is likely to require a high degree of coordination and integration (Porter, 1986).

A further complication is caused by the intervention of national governments in international business. Governments both promote and protect against global competition. They seek to attract inward investment by large companies and in so doing help them to become more successful. At the same time they impose

sourcing requirements and raise protective trade barriers that may impede the pursuit of a true global strategy.

Doz & Prahalad (1984) and Prahalad & Doz (1987) consider that although every business is subject to varying degrees of economic, competitive and technological pressure which push it towards becoming global or remaining locally responsive, most have to accommodate both pressures simultaneously. This results in managers having to make difficult trade-offs in the extent and form of integration and responsiveness. Prahalad & Doz point out that labelling businesses as “global” or “multidomestic” may actually conceal and undervalue these crucial managerial tasks.

4.5.3 Economic regulation

Economic regulation concerns the way in which the economic process is normalised; this concerns the norms for relations within which the process of production and the division of goods for satisfying demand takes place, as well as the governance and coordination mechanisms pertaining to these (Stevens, 1999). The concept of economic regulation concerns the pattern of rules that determine who takes the decisions regarding production and the destination of goods and services and how these are coordinated.

To what extent the state lays down or tries to influence the limiting conditions for economic activity depends on the current political ideology. Eucken (1950) (as quoted in Stevens, 1999: 18-19) emphasised that the economic process can be coordinated in principle by three different actors:

- ❑ The state
- ❑ Groups
- ❑ The market

The control mechanism differs fundamentally in these three regulatory models. In management by the state, control over economic activity is in the hands of politicians. Decision making about the allocation of the means of production and the coordinating of supply and demand takes place through the budget

mechanism and political and administrative procedures. In the management by the market model, the coordinating principles are the price mechanism and the level of competition between suppliers. It is difficult to distinguish management by groups as a separate form of regulation; management by groups can be interpreted as 'consultation economics' but consultation cannot equate to decision-making and coordination.

However, the attention devoted to economic regulation often fails to take account of specific characteristics such as the degree of development and rate of innovation, the relationship between various economic sectors, and the degree of openness and dependence on foreign markets, whereas these are just as important to a description of an economy as the degree of centralisation. These two models also ignore the countless tools which a government has at its disposal to influence the market without obstructing spontaneous market relations.

Regulation in international liner container shipping has previously been discussed in Chapter 3, which also gave reference to the statutory role of some Shippers' Councils', the latter perhaps corresponding to Eucken's 'groups'. In Chapter 6, and based on empirical evidence, the different regulations imposed by a number of host governments that affect liner shipping operations are considered in more detail.

4.6 Organisational implications

4.6.1 The need for integration *and* responsiveness

The nature of the strategic challenge facing firms in today's global environment implies therefore the need for organisational capability to facilitate strategy implementation. Arguably senior managers most critical task is to structure the relationship between headquarters and subsidiaries (Doz & Prahalad, 1984).

For any large complex organisation the problem of ensuring that its constituent parts act in accordance with overall policy is a central and continuing concern. The specialisation of subsidiaries which allows the organisation to undertake

complicated tasks requires an equally developed system of integration to bind them into an operational whole (Lawrence & Lorsch, 1967). Global firms must therefore maintain a system of integration that minimises overlap and conflict among subsidiaries, while allowing the necessary flexibility to adapt to their particular environments.

4.6.2 Management capabilities

Even successful, well-established organisations face problems in managing operations, and after much experimentation, an ideal international structure remains elusive (Bartlett, 1983). However, as a firm's product/market strategy changes it is important that the organisation's structure is also changed to support implementation of the new strategy. Critical capabilities that management has to develop to compete successfully internationally are:

- ❑ *Efficiency in executing agreed-upon strategies through a process of control of subsidiary actions;*
- ❑ *Ability to change the nature of the headquarter-subsidiary, and subsidiary-to-subsidiary, relationships in order to allow required changes in strategic direction to take place; and*
- ❑ *Flexibility to bring subsidiaries together to compete in a coordinated fashion, to exploit government-controlled and non-conventional markets (e.g. China), and selectively to take advantage of interdependencies across businesses (rather than to suffer from them).*

Doz, Prahalad & Hamel, 1990: 119)

Taken together, these three capabilities might be regarded as the keys to the strategic management process in a multinational business. They allow corporate management, or the business unit management for a single business to vary selectively the nature and the extent of autonomous responsiveness to diverse

market conditions, and the degree of coordination and integration across borders.

Essentially, global firms have to ensure their international subsidiaries understand that they are part of a worldwide company, not a local one. But the difficulty here may relate to how top management can maintain a balance between national responsiveness and international integration priorities without stifling initiative and entrepreneurship by imposing central decisions or striving for a “perfect” balance on each decision. In other words:

“The issue is to allow sufficient asymmetry in the outcome of individual decisions to avoid paralysis, and at the same time to maintain a sufficiently stable overall balance so that, a priori, both responsiveness and integration priorities are effectively represented in the process of reaching each decision.”

(Prahalad & Doz, 1984: 47)

4.7 Integration-Responsiveness Framework (Prahalad & Doz, 1987)

4.7.1 Selecting the analytical framework

This thesis investigates the global container shipping industry from a strategic management disciplinary perspective. Strategic management scholars advocate the use of analytical frameworks specifically designed to facilitate analysis of important aspects of strategy (e.g. Porter, 1986; Johnson & Scholes, 1993). Although many frameworks exist, some of which have been considered in this chapter (e.g. generic strategies, value or production chain, SWOT), each tends to have a particular purpose. Ultimately, what is important is that the framework chosen should be suited to the task in question.

Review of the strategic management literature suggests only one analytical framework exists which is specifically designed to facilitate analysis of the pressures faced by global industries in respect of conflicting needs for global integration and local responsiveness – the *Integration-Responsiveness Framework* (Prahalad & Doz, 1987). Prahalad & Doz used the framework to

help analyse integration-responsiveness pressures faced by global pharmaceutical and electronics businesses (Prahalad & Doz, 1987).

The merits of the framework and its relevance to the global container shipping industry were initially tested during preliminary interviews in the study programme with the collaborating organisation, Sea-Land. The framework was found to provide a sufficiently comprehensive coverage of key industry influences vis-à-vis global integration and local responsiveness. This, plus the lack of any other published framework(s) designed to help analyse industry pressures for global integration and local responsiveness, resulted in the Prahalad & Doz *Integration-Responsiveness Framework* being selected for use in this study.

4.7.2 Methodological building blocks

Prahalad & Doz (1987) established what they termed a set of three “building blocks” of the methodology for analysing global industry pressures and mapping relevant industry characteristics, starting with the managerial demands that are imposed on senior management. These building blocks consist of the need for *strategic coordination* and for *integration of activities* across global markets, and the need for *local responsiveness*.

4.7.3 Global strategic coordination.

Prahalad & Doz define strategic coordination as the management of resource commitments across national boundaries in pursuit of a strategy. The head office at the centre of an international business has to deal with its affiliates or branches located around the world and coordination refers to the efforts made by the centre to ensure cooperation and collaboration between them. This may involve business-wide strategic planning and intervention at the policy-making level to avoid duplication and/or competition between members of the same group. As Prahalad & Doz maintain, coordination decisions transcend a single subsidiary. The centre may assign strategic roles to its subsidiaries in order to develop a coherent response to a global competitor, however, global

coordination implies a high level of central direction of planning and policy-making throughout the business.

4.7.4 Global integration of activities.

Integration refers to the centralised management of geographically dispersed activities on an ongoing basis. This covers the more detailed day-to-day scheduling and controlling of operations to ensure the smooth running of the business. It is characterised by efforts to minimise duplication and waste and to maximise the efficiency of operations. Prahalad & Doz give as an example managing shipments of parts and subassemblies across a network of manufacturing facilities in various countries. This would involve integration of production, scheduling, transport and overall logistics across borders. Global integration implies a high level of central control of day-to-day operations throughout the business.

4.7.5 Local responsiveness.

Local responsiveness refers to resource commitment decisions taken autonomously by a subsidiary in response to primarily local competitive or customer demands. In some businesses, there may be no competitive advantage to be gained by coordinating actions across subsidiaries; in fact, in certain instances that may prove to be detrimental. There may be no meaningful economies of scale or there may be a real need for local adaptation and differentiation of the product/service. In businesses where the pressures for local responsiveness are great, individual affiliates or branches around the world will have a great deal of independence in decision-making and their policies will not be influenced to any significant extent by the needs of other members of their group.

4.7.6 Criteria for analysing global integration and local responsiveness

These three building blocks refer to the *nature of relationships* between head office and affiliates, as well as among affiliates in a multinational setting. The purpose of the framework is to permit assessment of the relative importance of

the two sets of conflicting pressures - for integration and for responsiveness (Prahalad & Doz assumed that the extent of strategic coordination is related to the need for integration) - on a business and to determine which of the two provides strategic leverage at a given point in time.

A range of criteria are suggested by Prahalad & Doz to help evaluate such pressures (see Table 4.1). These criteria formed the basis of the interview questionnaire used in this study (see APPENDIX B), with specific reference to Sea-Land and Evergreen and the container shipping industry, the results of which are presented in Chapter 6.

In order to assess pressures for global strategic coordination on a given business, it is necessary to consider the importance of multinational customers, competitors, and the intensity of investment.

To assess pressures for global operational integration, the focus is on technological intensity, the need for cost reduction, universal needs of customers, and access to energy and raw materials.

Table 4.1 Criteria for analysing global integration and local responsiveness

Pressures for Global Strategic Coordination
Importance of multinational customers
Importance of multinational competitors
Investment intensity
Pressures for Global Operational Integration
Technology intensity
Pressure for cost reduction
Universal needs
Access to raw materials and energy
Pressures for Local Responsiveness
Differences in customer needs
Differences in distribution
Need for substitutes and product adaptation
Market structure
Host government demands
Source: Prahalad, C.K. & Doz, Y.L. (1987) <i>The Multinational Mission - Balancing Local Demands and Global Vision</i>. New York: Free Press.

Evaluating pressures for local responsiveness in a global industry requires analysis across countries and regions of different customer needs, different distribution channels, substitute products and product adaptation, different market structures, and the various demands made by host governments.

Essentially, through in-depth analysis of all of these factors, Prahalad & Doz maintain that it is possible to fully analyse conflicting pressures for integration and responsiveness on a global business. Hence this framework is employed to aid analysis of integration and responsiveness in the global container shipping industry (see Chapter 6).

4.8 Summary

This chapter outlined factors leading to globalisation of business activity, with reference to liner container shipping as appropriate. The dual influences of homogeneous demand and susceptibility to scale economies largely provides sufficient explanation for globalisation of the liner container shipping industry. However, there are warnings that scale economies may not continue for ever, with diseconomies in port adversely impacting on larger ships.

The chapter reviewed analytical frameworks that may be used to investigate strategic management issues confronting global corporations. A number of frameworks can be used to aid investigation of strategic management issues. Many of these frameworks can be employed to facilitate analysis of any industry, whether global, multidomestic, or domestic.

Global strategies were contrasted with multidomestic strategies, the latter formerly employed by MNC's and still having significant relevance today for many corporations. In a global industry, a key question relates to how MNC's balance the need for global integration of activities, yet still remain locally responsive to the diverse demands of many different national and regional markets. This inevitably requires firms to carefully consider the organisational implications of pursuing a global strategy.

From a regulatory perspective, container shipping appears to be a highly unusual industry. As highlighted in Chapter 3, 'groups' of shippers in the guise of Shippers' Councils', do in some countries regulate liner services. On the supply side, liner conferences regulate both price and capacity, and are legally permitted to do so.

In reviewing the strategic management literature, an analytical framework specifically designed to aid analysis of the conflicting pressures for global integration and local responsiveness was identified. The *Integration-Responsiveness Framework* is used in this study to evaluate and compare organisational pressures facing global container lines, pressures which imply a need for global integration, and pressures which suggest local responsiveness is necessary (see Chapter 6).

CHAPTER 5

CONTRASTING STRATEGIES IN CONTAINER SHIPPING

5.1 Introduction

Although basically providing a homogeneous service to shippers, global container lines may adopt rather different strategies in order to meet shippers needs. This appears to be particularly the case in relation to asset configuration (e.g. ships, containers, terminals, landside transport etc.), in terms of the extent and form of vertical integration, the use or extent of partnerships with other lines, and membership or non-membership of liner conferences.

The objective of this chapter is to place in context, and to compare, two of the leading carriers on the basis of these key variables. The carriers analysed in depth here are Sea-Land Service Inc. and Evergreen Marine Corporation. These companies are believed to represent examples of the main modes of operation adopted in the container shipping industry as proposed in chapter 2.

Data presented in this chapter is mainly derived from secondary published sources. The *Containerisation International* journal and yearbook have been particularly useful sources. An effort has also been made during subsequent interviews with both Sea-Land and Evergreen (see APPENDIX A) to verify much of the information presented.

Chapter 5 contains six main sections, beginning with a brief outline of the origins and development of both Sea-Land and Evergreen. The focus then concentrates on the 'hardware' each company employs to maintain a global service, with analysis and comparison of container ship fleets, route networks, containers, and terminals. A comparison of organisation structures' reveals significant differences in approach, as does the subsequent investigation of the lines' respective conference affiliations. Finally, the analysis concludes with a review of Sea-Land's and Evergreen's respective market shares on the main East-West trades, followed by analysis of key financial indicators in respect of each company.

The intention of this chapter is to set the scene for chapter 6 which, through application of a theoretical framework (Prahalad & Doz, 1987) to help categorise data collected, seeks to further analyse some of the key differences

(and similarities) between Sea-Land and Evergreen in relation to their global strategic management.

5.2 Corporate origins

5.2.1 Sea-Land Service Inc.

Sea-Land Service Inc. (Sea-Land) is a wholly owned subsidiary of CSX Corporation. Based in Richmond, Virginia, CSX is a 'family' of international transportation companies providing a wide variety of rail, container shipping, intermodal, barging, trucking, contract logistics and related services worldwide. Combined, the CSX group of companies has an annual turnover of \$9 billion and employs approximately 43,000 people (1998).

The origins of Sea-Land can be traced back to 1956 when Malcolm McLean, a trucker, purchased Pan Atlantic Steamship Corporation. McLean believed that traditional methods of freight transport and shipping could be improved by using standardised steel containers. He subsequently converted Pan Atlantic's conventional cargo-passenger ships into container ships and began offering regular container shipping services between New York and Houston, Jacksonville, Miami, and San Juan (Van Den Burg, 1969; Dupin, 1986).

In 1960, McLean changed the name of his steamship company to Sea-Land Service Inc. "to better describe the services offered" (Rinaldi, 1972). During that year, the intercoastal service was extended via the Panama Canal to the West Coast, calling at the Californian ports of Long Beach and Oakland. The container service was extended further in 1964 to include calls at the Pacific west coast port of Seattle and onwards to Alaska.

In April 1966, Sea-Land introduced the first container service outside of US coastal waters when it began a weekly service across the North Atlantic to Europe. Later in 1966, a further service was introduced across the Pacific Ocean linking California with Okinawa and then on to Japan and South-East Asia.

In 1969, McLean sold Sea-Land to the tobacco conglomerate R. J. Reynolds Industries. Sea-Land became a publicly-held company in 1984 and, after several

unsuccessful takeover attempts, eventually became a subsidiary of CSX Corporation in 1986. McLean himself later acquired Sea-Land's great competitor, United States Lines (USL), which subsequently went bankrupt in 1987.

5.2.2 Evergreen Marine Corporation

Evergreen Marine Corporation is part of the Taiwan-based Evergreen Group. Although the Group's beginnings were in shipping, Evergreen has since expanded and now encompasses more than twenty companies involved in heavy industries, property investment, computer software, air transport, and hotels. Evergreen's subsidiary companies are divided into four main business categories:

- ❑ Marine shipping, container and transport industries;
- ❑ Airline and hotel industries;
- ❑ Heavy industrial and construction industries; and
- ❑ Computer information industry.

Evergreen was established by the present chairman Chang Yung-fa, a former ships' captain, in 1968 (Lim, 1996). Based in Taiwan, the company started with just one second-hand ship which plied between Asia and the US. Chang was born in Formosa (now Taiwan) during the Japanese occupation of the island. During the occupation he learned to speak Japanese and this is believed to be a key factor in his subsequent relationships with Japanese bankers and shipyards (Magnier, 1990). By 1972, Chang had built up his fleet to twelve ships, financed with the help of the Japanese trading house Marubeni. Evergreen services were expanded during this period to include calls in the Mid-East and the Caribbean.

Realising that containerisation represented the way forward for shipping, in 1975 Chang built four advanced container ships and launched a new service

between Asia and the US east coast. Additional new vessels soon followed and, by 1979, further new services were initiated between Asia-US west coast and between Asia-Europe.

In 1984, Chang began his most ambitious service yet - two 80-day Round-The-World (RTW) services, one circling the globe in an eastbound direction, the other westbound. Twenty-four large ships were built specifically for the RTW service. Including containers, the RTW service represented a total investment of approximately \$1 billion (Kim, 1987).

After developing the business into one of the world's largest container shipping operations, Chang's Evergreen Group then began the process of diversification into other fields. Although still very much a family-controlled business, in 1987 the group made Taiwan's largest ever public offering of shares (the offering was vastly over-subscribed) when Chang put up a 5 per cent stake for public subscription. Chang has also transferred over 25 per cent of his shares in the group to employees.

5.3 Ships and trade routes

5.3.1 Sea-Land ships and main East-West routes

In 1997, Sea-Land's total fleet consisted of 94 ships with an aggregate slot capacity of 198,765 TEU (see Table 5.1). Some 47 of these ships are employed on linehaul¹ routes. Linehaul ships are Sea-Land's larger vessels, accounting for a total shipboard capacity of 145,269 TEU, equivalent to 73 per cent of the line's total capacity. Average size of Sea-Land's linehaul vessels is 3,090 TEU, with the smallest being 1,131 TEU and the largest 4,354 TEU. The remaining 47 ships offering a combined total aggregate capacity of 53,496 TEU (27 per cent) are employed on feeder service operations. The average size of feeder vessel employed is 1,138 TEU, which is around one third the capacity of the average-sized linehaul ship.

¹ 'Linehaul' or 'mainline' are terms used for deep-sea or inter-continental liner services.

Some 30 per cent of Sea-Land's total fleet capacity is made up of chartered vessels. In 1997, this amounted to 46 ships offering a combined slot capacity of 59,408 TEU. Most of the ships on charter are feeder vessels, although there are also 13 linehaul vessels with a combined slot capacity of approximately 30,000 TEU on charter. About half of all chartered slot capacity therefore relates to linehaul ships.

Table 5.1 Sea-Land fleet and deployment on main East-West routes, 1997

Ships/TEU size	Route deployment
5 x 4,354	Eur/ECNA/USGC/ECNA/Eur
2 x 1,316	Eur/Med/ECSA/Med/Eur
1 x 2,536	Eur/Med/FE/Med/Eur
1 x 2,636	
1 x 3,017	
3 x 3,918	Eur/Med/ME/Ind Sub/ R Sea/ Med/Eur
3 x 3,681	FE/Ind Sub/Med/ECNA/Med/R Sea/ME/FE
2 x 4,062	
2 x 1,388	USGC/ECNA/Med/ECNA
1 x 1,608	
1 x 1,131	
3 x 4,062	WCNA/FE/WCNA
5 x 2,758	
1 x 3,681	
4 x 2,744	
1 x 2,324	
2 x 2,672	
4 x 4,062	WCNA/FE/WCNA
2 x 2,324	WCNA/Haw/N Pac/FE/WCNA
2 x 2,304	
1 x 2,437	
Sub total	47 ships/145,269 TEU
Feeders	47 ships/53,496 TEU
Total fleet	94 ships/198,765 TEU
Of which chartered	46 ships/59,408 TEU (30%)

Source: *Containerisation International Yearbook 1997*.

Notes: Eur - Europe; ECNA - East Coast North America; USGC - US Gulf Coast; Med - Mediterranean; FE - Far East; ME - Mid-East; Ind Sub - Indian Sub-Continent; R Sea - Red Sea; WCNA - West Coast North America; Haw - Hawaii; N Pac - North Pacific.

Sea-Land has not been noted for building new ships in recent years. Nine newbuildings of 4,062 TEU were added to the fleet between 1995-1997, however, this was rather a rare event for Sea-Land; these were the first newbuildings ordered by the American carrier for almost a decade.

Consequently, over two-thirds of the linehaul vessels in the fleet are over 10 years old. The recent fleet strategy has focussed on upgrading older vessels with more efficient engines, and reducing loading capacity of some ships in order to maintain a faster service speed (to compete with new faster ships being introduced by competitors).

In 1995, Sea-Land entered into a global alliance agreement with the Danish carrier Maersk Line, subsequently implemented in May 1996. The agreement, which runs for 5 years until 2001, with options to extend for a further 5 years, allows both carriers to share ships (and other assets) and offer a wide range of joint services covering both linehaul and feeder routes.

A key difference between the partners is that, unlike Sea-Land, Maersk has an ongoing programme of vessel newbuildings; Maersk is committed to spending at least \$1.2 billion on new tonnage between 1995 and 1999. This includes a series of 15 x 6,000-6,600 TEU and 7 x 4,300 TEU ships for linehaul duties, and 10 x 1,092 TEU ships for feeder services.

Maersk's total fleet capacity will subsequently increase from 223,330 TEU in 1997 to more than 340,000 TEU (161 ships) by 1999 (Boyes, 1997). Sea-Land agreed to charter 6 x 6,200 TEU newbuildings from Greek owner Costamare from 1999. However, even with this change in the size of Sea-Land's fleet (there are currently no other orders for newbuildings pending), by 1999 Maersk is expected to have a fleet of ships offering a total carrying capacity more than one third greater than Sea-Land. While Maersk will take the number 1 position in liner shipping in terms of capacity in 1998, Sea-Land's movement is in the opposite direction, to number 6.

Table 5.1 shows the routes Sea-Land's linehaul ships are employed on. Routes to and from the West Coast North America (WCNA) dominate; Sea-Land has around 25 of its largest vessels employed on these routes, offering a combined aggregate slot capacity of nearly 70,000 TEU, virtually half the company's entire linehaul fleet. Other significant routes where own tonnage is employed include Transatlantic services, and services linking the Mid-East and the Indian Sub-Continent. Sea-Land has committed very limited tonnage to the Europe/Far East trade although the US carrier has access to global partner Maersk's

extensive service network on this route; Maersk is also placing most of its new and fast 15 x 6,000+ TEU ships on the latter trade.

Table 5.2 shows the services Sea-Land is able to offer shippers on the major East-West trades. By combining with Maersk, Sea-Land now offers: 4 sailings per week between Asia/Europe; 7 per week between Asia/US; and 4 per week across the Atlantic between Europe/US. Other important and growing East-West trades now served by weekly fixed day sailing frequencies include links from Europe and ECNA to Mid-East and Indian Sub-Continent destinations.

Table 5.2 Sea-Land's main East-West services, 1997

Route	Frequency	Partners
Asia/Europe	4 per week	Maersk
Asia/US	7 per week	Maersk
Europe/US	4 per week	Maersk, VSA
Europe/Mid-East/ISC	1 per week	Maersk
Asia/Mid-East	1 per week	Maersk

Note: VSA - Vessel Sharing Agreement between P&O-Nedlloyd, OOCL and Sea-Land provide three of the four Europe/US weekly services.

5.3.2 Evergreen ships and main East-West routes

Evergreen Marine Corporation controls a fleet of 112 ships (including newbuildings expected to be in service by 1999), with a total slot capacity of 265,308 TEU (see Table 5.3). Some 62 of these vessels, with an aggregate slot capacity of 213,968 TEU (80 per cent of total capacity), comprise larger linehaul ships. The remaining 50 ships are feeder vessels. Average size of deep-sea linehaul vessel employed is 3,451 TEU while the average size of feeder is 1,027 TEU. The total fleet includes 39 ships operated by Evergreen's affiliate company Uniglory, the latter specialising in feeder services mostly throughout Asia.

Only around 8 per cent of the total fleet by slot capacity (21,493 TEU) is chartered. This amounts to about 20 ships, all feeder vessels operated by Uniglory. Thus, Evergreen owns all of its linehaul ships and does not employ any chartered tonnage on deep-sea services. This also reflects the fact that

Evergreen, similar to Sea-Land's global partner Maersk, is virtually always building new ships.

Table 5.3 Evergreen fleet and deployment on main east-west routes, 1997

Ships/TEU size	Route deployment
3 x 1,810	Eur/Med/FE/Ind Sub/ Eur
10 x 4,229	RTW Westbound -
10 x 4,173	FE/Ind Sub/Eur/ECNA/Carib/WCNA/FE
7 x 3,428	RTW Eastbound -
5 x 2,728	FE/WCNA/C Am/ECNA/Eur/Ind Sub/FE
12 x 2,728	WCNA/FE/Ind Sub/R Sea/Med/R
5 x 5,364	Sea/FE/WCNA
4 x 3,428	WCNA/FE/WCNA
3 x 2,728	
3 x 1,810	
Sub total	62 ships/213,968 TEU
Feeders	11 ships/12,804 TEU (Newbuildings 1997-99)
Feeders (Uniglory)	39 ships/38,536 TEU
Total fleet	112 ships/265,308 TEU
Of which chartered	20 ships/21,493 TEU (8%)

Source: *Containerisation International Yearbook 1997*.

Notes: RTW - Round-The-World; Eur - Europe; Med - Mediterranean; Ind Sub - Indian Sub-Continent; FE - Far East; ECNA - East Coast North America; Carib - Caribbean; WCNA - West Coast North America; C Am - Central America; R Sea - Red Sea.

The newbuilding programme for ships entering service between 1996 and 1999 comprised 5 x 5,364 TEU and 10 x 4,173 TEU linehaul vessels, plus 10 x 1,164 TEU feeders. In 1999, additional orders were placed for 9 x 5,652 TEU and 9 x 1,618 TEU ships. By the end of 1999, the company expected to have a total of 132 ships in service offering capacity of over 300,000 TEU, with more due for delivery in 2000 and 2001. Reflecting the company's strategy of constantly building new ships, in excess of two-thirds of Evergreen's fleet are under 10 years old.

A key part of Evergreen's worldwide network is its Round-The-World (RTW) services which require large and separate fleets of ships travelling both eastbound and westbound. Each RTW service takes in all three major global East-West trades (i.e. the Transpacific, Transatlantic and Europe/Far East)

during one circumnavigation (Lim, 1996). To support its RTW services, Evergreen also has a number of end-to-end (i.e. one trade lane) and pendulum (i.e. two trade lane) services connecting the main East-West routes allowing the carrier to offer additional and frequent services to more ports.

Table 5.4 sets out the main East-West services offered by Evergreen. Four sailings a week are offered between Asia/Europe, one of which is the RTW service with the remainder consisting of joint venture services with Italian state-owned line Lloyd Triestino² (albeit with Evergreen providing most of the ships). Six sailings per week are offered on the Transpacific trade and, like Sea-Land, this is the trade on which most of Evergreen's capacity is targeted, reflecting the fact that it is the world's largest single trade lane. Evergreen offers four weekly sailings across the Atlantic, one of these through a reciprocal slot sharing agreement with the US carrier Lykes Lines. An increasingly important weekly service is maintained between Asia/Mid-East, and Evergreen also maintains a weekly southern hemisphere pendulum service linking Asia with South Africa and then on to South America.

Table 5.4 Evergreen's main East-West services

Route	Frequency	Partners
Asia/Europe	4 per week	Lloyd Triestino
Asia/US	6 per week	Lloyd Triestino
Europe/US	4 per week	Lykes
Asia/Mid-East	1 per week	-
Asia/S Africa/EC S America	1 per week	-

Notes: Lloyd Triestino are partners on two of Evergreen's four weekly Asia/Europe services and on two of the six Asia/US services; Evergreen has a reciprocal slot sharing agreement on Lykes Lines single weekly sailing between Europe and the US Gulf Coast.

5.3.3 Sea-Land feeder services

Both Sea-Land and Evergreen operate an extensive network of feeder services to support their global linehaul services. In Europe, Sea-Land's network of feeder services operate between the company's main hub ports of Rotterdam and Algeciras, from there connecting with smaller regional ports throughout the North Sea, Scandinavia, Baltic, Mediterranean, Adriatic, and Black Sea regions.

Sea-Land's partner Maersk has expanded this system by adding relay services between the Mediterranean hub port of Algeiras and South and West Africa, services which Sea-Land are expected to take space on at some point in the future.

In Asia, Sea-Land and Maersk together provide 44 separate feeder services (Boyes, 1996). These services permit each line to be a major player in intra-Asian trades as well as linking ports in Russia, China, Thailand, Indonesia, Malaysia, the Philippines and Vietnam into their linehaul network. Maersk has also begun new relay services to Australia and New Zealand, from Singapore. From the latter port connections are made with the main East-West services to Europe and North America. Sea-Land are allocated space on the latter services.

The sharing of vessel space between Sea-Land and Maersk is otherwise virtually system-wide, albeit with the exception of so-called 'domestic trades', those between the US mainland and Puerto Rico, Hawaii and Alaska. The US Jones Act prohibits non-US carriers from serving these trades. However, elsewhere in the Americas, Sea-Land and Maersk maintain an extensive network with weekly or twice-weekly joint services offered to a multitude of destinations throughout Central America, the Caribbean, and both coasts of South America. Connecting hubs for these services are mainly in the US at Long Beach on the west coast, Jacksonville and New York on the east coast. New terminals under construction by independent terminal operators in Panama are also expected to figure large in terms of future intra-Americas transshipment traffic for both carriers.

5.3.4 Evergreen feeder services

In 1984, Evergreen helped to establish intra-Asia container feeder line Uniglory Marine Corporation, also based in Taiwan. Uniglory developed a number of feeder services throughout Asia, initially designed to connect with and support Evergreen's RTW services. Evergreen owns 34% of Uniglory, and Evergreen feeder cargo now accounts for only around 15-18% of Uniglory's total business,

² Evergreen has since acquired Lloyd Triestino.

reflecting the strides the affiliate company has made in developing its own intra-Asia traffic on the back of Evergreen movements.

From Singapore, Uniglory feeder ships provide connections to the Philippines, Indonesia, Thailand, Malaysia, and Vietnam. Chinese ports are fed over Hong Kong and Pusan (Korea). A further service has been introduced between Taiwan and China; however, this service was only allowed to carry transshipment cargo in accordance with government rulings. Uniglory also serves Indian Sub-Continent markets from the port of Colombo.

Now building ships for its own use, Uniglory has previously benefited from the 'domino' system whereby Evergreen's constant flow of newbuildings tipped the smallest ships from its fleet into the Uniglory pool. This enabled Uniglory to grow in order to meet Asian demand as well as expand its services further afield.

Evergreen's feeder activities in the Americas are not so extensive as in Asia. Two feeder ships operate from the company's regional hubs at Panama and Kingston, Jamaica. These feeders serve a number of countries and islands throughout the region including Venezuela, Colombia, and Puerto Rico. A further feeder service has been introduced between Uruguay and Brazil, to link in with the Southern Hemisphere pendulum service between Asia and South America.

Evergreen make considerable use of third party common-user feeder services throughout Europe. Hamburg is Evergreen's designated transshipment centre for Scandinavian and Baltic countries. From there feeders serve Norway, Sweden, Denmark and Finland, with customers in Russia served via Helsinki. Thamesport, near London, is the company's hub for the UK and Ireland. Feeder ships sail to/from Thamesport connecting with ports in Scotland, Cornwall, and a number of Irish ports. Spanish and Portuguese markets are served by feeder from Rotterdam.

Evergreen tries to avoid high feeder costs, where possible, by extending the number of direct ports of call for linehaul vessels. For instance, on one of its new weekly Europe/Far East service strings, direct calls are now made at Lisbon and Gothenburg, both ports formerly served by feeder. A similar process has

occurred in Asia, with more direct calls now being made at Chinese and Japanese ports.

5.3.5 Sea-Land inland transport services

Throughout the US, Sea-Land's inland connections are to a large degree provided by sister companies within parent CSX Corporation. CSX Intermodal offers trucking services from a network of 33 intermodal terminals in the US; CSX transportation provide rail services in 20 states; and American Commercial Lines operate over 3,000 barges along the main navigable inland waterways. In addition to using sister companies for intermodal connections, Sea-Land employ independent third-party trucking and rail operators where necessary.

In Europe, Sea-Land contract out trucking in each market to local road haulage companies, and inland shipping movements to barge operators. The US company has, however, developed a number of rail services in what is fast becoming a more liberalised European rail transport industry. Sea-Land started a new rail service between Rotterdam and Moscow in 1993. Three more rail services were started in 1994, between Rotterdam and Gemersheim (in Southern Germany), from Rotterdam to Milan, and between the Black Sea port of Novorossiysk and a range of inland points in the CIS. Since 1992 Sea-Land has also managed the Trans-Siberian rail service between Brest and Vostochnyy in partnership with the Russian Ministry of Railways.

Throughout Asia, landside transport is dominated by road haulage for which Sea-Land usually sub-contract to local operators. However, in instances where it is considered advantageous to set up its own facilities this has been done, as in China, where Sea-Land formed Guangdong Orient Trucking Ltd together with a local partner in 1993. Guangdong Orient purchased 40 new tractors to begin with, and established offices in Guangzhou and in Shenzhen. In an effort to expand its global intermodal capability, Sea-Land is currently investigating possibilities to become involved in provision of rail container services in both China and India.

5.3.6 Evergreen inland transport services

With the exception of Taiwan, Evergreen Line sub-contract its road haulage needs to independent truckers virtually everywhere else. Normally in each country the line has an agreement with one major trucker to attend to all its road transport needs. In Taiwan, subsidiary company Evergreen Transport Corporation own and operate a significant fleet comprising 180 trucks and 530 trailers. Rail services are only extensively used in North America where Evergreen employ the services of stack train operators linking its hub terminals at Vancouver, Seattle, Los Angeles, and New York with a number of inland destinations such as Chicago, Dallas, Toronto, and Montreal.

5.4 Containers and terminals

5.4.1 Sea-Land container fleet

In addition to the need to have an extensive fleet of ships, the global container carrier also needs to have at its disposal a very large fleet of containers, of various sizes and types. Sea-Land's total global equipment fleet in 1995 consisted of 207,454 TEU (see Table 5.5). Of this, just over 120,000 TEU (almost 60 per cent) consisted of 40' dry cargo containers. With nearly 31,000 TEU in 40' refrigerated containers, Sea-Land controls one of the world's largest reefer container fleets. The company also has a significant number of 'specials' (e.g. open-tops, platforms, etc.), amounting to 11,854 TEU.

Just under half of Sea-Land's container fleet (46 per cent, or 95,322 TEU) is owned by the carrier. Owned containers are supplemented by a further 112,132 TEU of leased units. Dry-cargo 40' and 20' containers account for the majority of leased containers (101,069 TEU or 90 per cent). Sea-Land's owned fleet therefore appears to be dominated by container types which are generally not available on the leased market, to a large extent, such as high cube containers, longer 45' containers, and refrigerated units. Over the last decade Sea-Land has progressively moved away from operating a predominantly owned fleet, to a predominantly leased container fleet today.

Table 5.5 Sea-Land's container fleet (at September 1, 1995)

Containers	Owned	Leased	Total (TEU)
20' dry vans	2,166	25,883	28,049
40' dry vans (HC)	18,277	4,033	44,620
40' dry vans	4,248	33,560	75,616
45' dry vans	6,710	590	16,425
40' refrig. (HC)	9,212	731	19,886
40' refrigerated	4,347	1,155	11,004
Specialised units	5,890	5,964	11,854
Total (TEU)	95,322	112,132	207,454
%	46%	54%	100%

Source: Containerisation International Yearbook 1995.

HC denotes high-cube (9'6" high) containers

Sea-Land also owns approximately 60,000 chassis and 300 double-stack rail cars. The chassis are virtually entirely used in North American terminals, many of which still store containers on chassis rather than stacking on the ground as is more common elsewhere. However, Sea-Land expect to phase most of these chassis out in future as US terminals revert to the more common ground stacking arrangement.

5.4.2 Evergreen container fleet

Evergreen's container equipment pool in 1995 totalled 401,670 TEU (see Table 5.6), equivalent to almost double that of Sea-Land. The fleet also includes containers used by Uniglory which are managed in the one pool by Evergreen. Evergreen own a total of 260,000 TEU, or 65 per cent of the fleet; Uniglory account for a further 24,780 TEU (6 per cent), whilst the balance of 116,230 TEU (equivalent to 29%) consist of leased units.

Approximately one quarter of the entire fleet is made up of 20' containers, highlighting Evergreen's strong position on the Europe/Asia trades where this size of unit is in demand, more especially eastbound. Nevertheless, 40' containers, including high-cubes, account for the largest portion of the fleet (66 per cent). The remainder of the fleet consists of reefers and specialised units. While Evergreen has a much larger container fleet than Sea-Land, Evergreen's fleet of refrigerated containers totalling 16,540 TEU is only about half of Sea-

Land's. Unlike Sea-Land, Evergreen does not have any of the longer 45' containers in its fleet, a unit almost entirely used in US markets.

Table 5.6 Evergreen's container fleet (at 1 September 1995)

Containers	Evergreen	Uniglory	Leased	Total (TEU)
20' dry vans	72,500	10,700	27,000	110,200
40' dry vans (HC)	22,500	1,050	-	47,100
40' dry vans	64,600	5,300	44,000	227,800
40' refrig (HC)	5,600	640	600	13,680
20' refrig	-	-	30	2,860
Specials	2,760	100	-	30
Total (TEU)	260,660	24,780	116,230	401,670
%	65%	6%	29%	100%

Source: Evergreen Equipment Team, Taipei
HC denotes high-cube (9'6" high) containers

The main reason Evergreen has a relatively low ratio of leased containers relative to Sea-Land (or for that matter other major carriers, as typically leased containers account for 50% of all containers across the liner industry) is that the Taiwan carrier owns its own container manufacturing facilities. Factories located in Taiwan and Malaysia, add approximately 25,000 TEU to the company's fleet each year, and account for 96 per cent of Evergreen's annual container purchases amounting to approximately \$100 million (Damas, 1994). Based on this rate of growth, the Evergreen container fleet in 1999 was estimated to be in the order of 500,000 TEU.

5.4.3 Sea-Land terminals

Sea-Land operate 25 terminals worldwide. Of these, 15 terminals are in North America, 5 in Asia, with 2 in Europe. Fourteen terminals are for the exclusive use of Sea-Land. Sea-Land has preferential berthing rights at a further 14 ports. Preferential berthing rights means a port provides a guarantee of a berth when a ship arrives on schedule, in return for a commitment from the line that a given volume of traffic will be handled at agreed handling rates.

Together with Maersk and local partners, Sea-Land is developing a new hub port at Mina Raysut in the south of Oman. Other new hub ports are being

considered in Panama and in Brazil (Crichton, 1995). The alliance with Maersk is intended to rationalise some of the terminal operations of both carriers. This is not always easy as in many ports each carrier still has a number of years to run on their separate lease agreements. However, the lines managed to overcome this problem in Algeciras and in Hong Kong where their terminals were adjacent to each other and this meant that all they needed to do was to remove the fence which separated them. The ultimate objective of the alliance is to have a single terminal in each port where there is sufficient land to accommodate both carriers' increasing volumes (Boyes, 1996).

5.4.4 Evergreen terminals

Instead of investing heavily in its own marine terminals, Evergreen seeks to enter into priority preferential berthing agreements with existing container terminal operating companies at key hub ports such as Singapore, Hong Kong, Hamburg, Rotterdam, Thamesport, Los Angeles, and Charleston. In offering a high volume of traffic to a port, Evergreen is able to negotiate competitive handling rates without the need to invest in terminals and equipment.

Evergreen nevertheless maintains a small number of dedicated hub terminals at which it leases facilities from the relevant port authorities', most notably at the new Thai port of Laem Chabang, at Los Angeles, and in Kaohsiung. The company has also developed a new hub terminal in Panama, at the Caribbean entrance to the canal (Crichton, 1995). Terminal ownership and operation is nevertheless the exception rather than the rule for Evergreen.

Aside from different strategies adopted by Sea-Land and Evergreen in regard to terminal ownership and operation, major hub ports used by both tend to be quite similar in each of the principal trading regions. For example, both lines' ships call at the largest container ports such as Rotterdam, New York, Long Beach/Los Angeles, Tokyo/Yokohama, Kaohsiung, Hong Kong and Singapore.

5.5 Organisation structures

5.5.1 Sea-Land divisions

Since president and CEO John Clancey was appointed in 1991, Sea-Land has undergone a major restructuring. With almost 9,000 employees worldwide in 1995, much of the restructuring has involved an element of downsizing, with the loss of around 1,000 employees over the 1991-96 period (Boyes, 1996). The restructuring has also involved the centralisation of key management functions within the new corporate headquarters in Charlotte, North Carolina. This led to all three key Sea-Land operating divisions - Pacific, Atlantic, and Americas - being relocated in Charlotte from the former HQ in New Jersey.

The Pacific division, with responsibility for Asia-North America trades, was formerly based in Seattle, while the Americas division, with overall responsibility for US offshore domestic trades, was based in Fort Lauderdale, Florida. The Atlantic division was based in Rotterdam, to which responsibility had been transferred from New Jersey as recently as 1993. Rotterdam and other former trade division headquarters have since been downgraded to 'regional sales coordinating office' status.

Under the existing arrangement, Sea-Land have placed increased emphasis on global marketing (Fossey, 1994). The company has formed a Global Services Division, also headquartered in Charlotte, to support all three operating divisions. This consolidation and centralisation of management functions has been influenced by a fundamental change in customer requirements.

There are around a hundred or so large shippers with regular worldwide business and these relatively few global shippers account for around 20-25 per cent of all East-West container traffic (Drewry, 1992). As these global shippers are cutting back on the number of carriers they do business with, Sea-Land's relocation to a single site where all decision makers are together is intended to make the company more responsive to the needs of these customers, and to improve operating efficiency at the same time as keeping costs down (Fossey, 1994). The new structure (see Figure 5.1) is intended to enable the organisation to think and act as one integrated, interactive company. A further benefit is

perceived to be the ability to quickly form cross-functional teams to improve processes and solve problems.

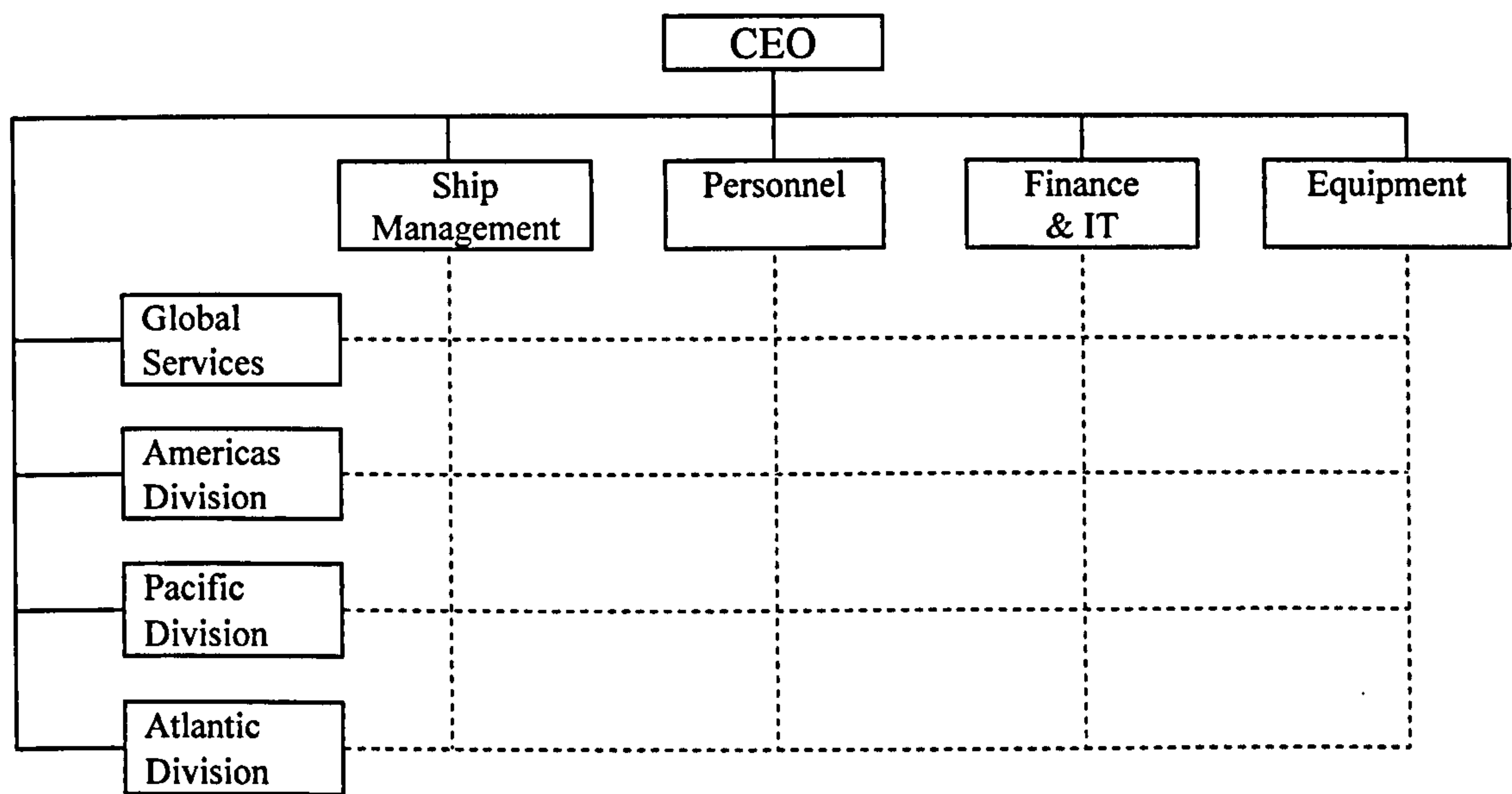


Figure 5.1 Sea-Land organisation structure

Also relocated to Charlotte are key administrative functions including IT, personnel, finance, equipment, and shipmanagement. Reasons given by Sea-Land for selecting Charlotte as location for its corporate headquarters (a rather unusual choice for an ocean carrier given that it is nowhere near a port) include:

- ❑ It is a cheaper place (than New Jersey) in which to conduct business;
- ❑ There is a good work ethic; and
- ❑ The state offers a good quality of life (perceived to be better than New Jersey, the previous corporate HQ location), which makes it easier to attract and retain personnel.

Approximately 500 people are based at the new corporate HQ. Key personnel have been transferred to Charlotte from Sea-Land offices around the world, including Europe and Asia as well as from throughout North America.

5.5.2 Evergreen divisions

Evergreen’s shipping business - Evergreen Marine Corporation - operates under the supervisory management of Evergreen International Corp. (Taiwan). Answerable in the first instance to Evergreen International is Evergreen Marine Corporation (Taiwan) Ltd, and Evergreen’s two Panamanian registered companies, Evergreen International SA, and Green Compass SA (see Figure 5.2). Approximately half of Evergreen’s container ship fleet are registered in Panama and these vessels are also owned by the Panamanian subsidiaries. The other half of the fleet is registered in Taiwan and owned by Evergreen Marine Corporation.

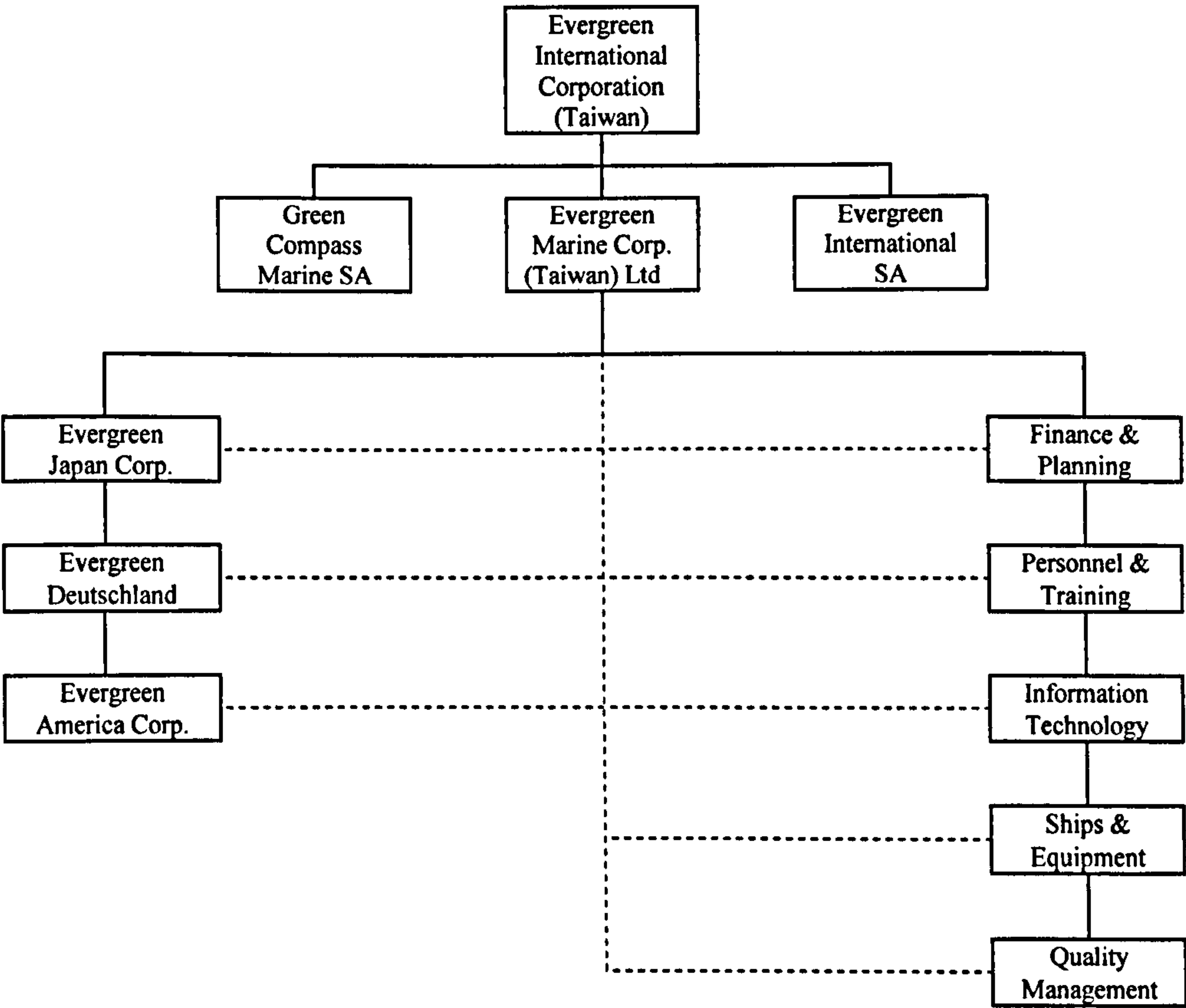


Figure 5.2 Evergreen organisation structure

The three regional headquarters located in Europe, North America, and Japan, are each responsible for export sales and overall financial performance within their own respective regions. Evergreen Marine Corporation (Taiwan) is responsible for South East Asia, and is also the headquarters for global ship operations, container equipment, personnel and training, finance and planning, and information technology functions.

Evergreen therefore appears to adopt a more decentralised management structure, at least as far as trade divisions are concerned, compared to Sea-Land's centralised matrix management structure. However, both companies maintain centralised control over vessels, equipment, and IT.

5.5.3 Sea-Land sales offices

Sea-Land has approximately 205 sales offices spread across the world. Each local sales office operates within one of the three trade divisions. Around 85 of these Sea-Land sales offices are branch offices, while at the remaining 120 locations the company is represented by local independent agencies. Sea-Land's overseas branch office businesses are generally not registered locally. The company prefers, where allowed, for all branch offices to trade as "Sea-Land Service Inc". This in turn avoids the need to prepare separate trading accounts in respect of each branch office for filing in the host country. However, this strategy is not possible in all markets as local regulations (e.g. in India, and in some Mid-East locations) insist a foreign company register a subsidiary in the host country or appoint a local representative agency.

Almost half of Sea-Land's own sales offices, 41 in total, are located in North America (including Alaska, Hawaii, and Guam). The company has 19 'principal' offices in North America, that is, offices located at key linehaul ports (e.g. Long Beach, New Jersey, Seattle) and important inland terminals (e.g. Chicago, Dallas). The remaining 22 offices are smaller units providing local representation in secondary markets such as St. Louis, El Paso, and Anchorage.

Sea-Land also maintains branch offices at virtually all its linehaul ports of call throughout Asia and Europe. Thus, key ports of call such as Felixstowe, Rotterdam, Bremerhaven, Algeciras, Singapore, Hong Kong, Pusan, Kaohsiung,

and Tokyo each have a branch office. Important inland or feeder port locations (such as Grangemouth, Wallhamn, and Bangkok) also have branch offices. In most other markets (e.g. Latin America, the Mid-East, India, and in several Mediterranean countries), Sea-Land employs independent agents to secure and reserve cargo, issue documentation, and attend to the needs of direct call vessels.

5.5.4 Evergreen sales offices

Evergreen is traditionally an 'agency' carrier. That is, the company mostly uses agents at whichever port its ships call. However, this approach has changed during recent years and today Evergreen now owns or part owns most of its agencies at main ports of call. Quite often Evergreen has purchased shares in its independent agents, as has happened in the UK, Germany, the US and Hong Kong.

Unlike Sea-Land, Evergreen has established its own locally-registered subsidiary companies in key locations including Japan (4 offices), Taiwan (4 offices), Germany (5 offices), the UK (5 offices), and throughout North America (25 offices).

Evergreen also employs independent agents in a number of markets. For example, the company has 24 agency representative offices in Asia, 35 in the Mid-East, 16 in Europe, 11 in the Indian Sub-Continent, plus 10 offices in the Caribbean and Central America. Where possible, the company will seek to acquire shares in its agents, some of which only act on behalf of the Taiwan line as it is company policy to have agents dedicated only to Evergreen services, thus avoiding any potential conflict of loyalty.

5.6 Conference affiliation

5.6.1 Transpacific

There are two rate-making agreements covering the Transpacific trade route³.

These are:

- ❑ The Asia North America Eastbound Rate Agreement (ANERA); and
- ❑ The Transpacific Westbound Rate Agreement.

Sea-Land is a signatory to both agreements, as is global partner Maersk. Evergreen, however, has refused to join either agreement and prefers to operate as an independent. In 1995, conference carriers accounted for an estimated 60 per cent of all Transpacific container traffic (Fossey, 1995a).

In addition to these rate agreements, there are two 'stabilisation agreements' relating to the Transpacific trade. The purpose of a stabilisation agreement is to avoid shipping lines introducing too much excess capacity onto a route as this generally precipitates a rates war. In the case of the Transpacific trade, the respective stabilisation agreements are:

- ❑ The Westbound Transpacific Stabilisation Agreement (WTSA); and
- ❑ The Transpacific Stabilisation Agreement (TSA).

Within both agreements, lines discuss general operating conditions, capacity, and rates (although not rate setting). Both Sea-Land and Evergreen Line are members of these stabilisation agreements.

³ Transpacific Rate Agreements disappeared in the second half of 1999 after OSRA 98' came into force and resulting in the introduction of several new independent liner services (*Containerisation International*, August 1999, p. 37).

5.6.2 Europe-Asia

The liner conference covering the Europe-Asia trade is the Far Eastern Freight Conference (FEFC). The FEFC has three regional units and these are:

- ❑ The Japan Europe Freight Conference (JEFC);
- ❑ The Asia Westbound Rate Agreement (AWRA); and
- ❑ The Eastbound Management Agreement (EMA).

Each regional unit is responsible for setting ocean freight rates for its respective geographic areas. FEFC member lines controlled an estimated 50-55 per cent of liner container traffic between Europe and Asia in 1995, independent lines the remainder (Fossey, 1995b).

Sea-Land is a relatively recent entrant to the Europe-Asia trades, only joining the FEFC in 1996, just prior to commencement of its global alliance with Maersk. Evergreen, however, has always preferred to remain outside of the conference system and, as on the Transpacific trade, the Taiwanese line has refused to sign up to any of the rate agreements on the Europe-Asia trades.

Separate from these rate agreements, there is also a stabilisation agreement covering the Europe-Far East trade, known as the Europe Asia Trades Agreement (EATA). Signatories to this agreement are able to exchange opinions on rates (but again not to set them) and capacity. Both Sea-Land and Evergreen Line are signatories to EATA, suggesting that for Evergreen, at least, there is a clear distinction between discussing industry capacity and discussing rates.

5.6.3 Transatlantic

The liner shipping conference covering the main Transatlantic trades is known as the Trans-Atlantic Conference Agreement (TACA). This agreement differs from the other main east-west trades in that it combines both rates and shipping capacity. While Sea-Land is a member of TACA, Evergreen, due to the Taiwan carrier's dislike of rate agreements, has decided to have no involvement with it.

It has been estimated that TACA member lines control between 65-70 per cent of container traffic on the Transatlantic trade (Damas, 1994).

5.7 Market shares and profitability

5.7.1 Market shares

Table 5.7 sets out the estimated market share of the main East-West linehaul trades held by Sea-Land and Evergreen. It needs to be stated that the volume of containers noted in Table 5.7 does not represent all container traffic carried by these lines as a number of other routes are omitted. For example, non East-West routes include North-South trades, intra-regional trades, and 'domestic' services (which are extensive in the US).

While Sea-Land is estimated to have carried 780,000 TEU in 1995 on the main East-West routes, the line actually carried nearly double this amount in total (i.e. 1.44 million TEU) on all its routes (Boyes, 1996). Similarly, Evergreen traffic figures do not include affiliate Uniglor's liftings in intra-Asia nor other trades. Nevertheless, Table 5.7 does serve to illustrate the relative importance of each line in the key East-West global trade lanes.

On the Europe-Asia trade, Evergreen would appear to have a much stronger position than Sea-Land. Evergreen had an estimated 5.5 per cent of the Europe-Asia market (in 1995), compared with just 1.5 per cent held by Sea-Land, a reflection of the latter's relatively recent entry into this trade during the late 1980s. Evergreen also appear to have a stronger position on the Transpacific trade, with a market share of 9 per cent in 1995 compared to Sea-Land's 6 per cent. Each line appears to be similarly positioned as far as the Transatlantic trade is concerned, with Sea-Land on 12 per cent and Evergreen just ahead with 13 per cent market share. Indeed, both lines' shares combined on the Transatlantic trade amount to a significant 25 per cent of the total market. Overall, Evergreen are estimated to have a combined market share of all East-West container trades in 1995 of 8.3 per cent (1.19 million TEU), whilst Sea-Land has 5.4 per cent (780,000 TEU).

Table 5.7 Market shares of main east-west linehaul trades 1995

(000TEU/%)							
Route	Sea-Land		Evergreen		Other lines		Total
Eur-Asia	71	1.5%	270	5.5%	4,550	93%	4,891 100%
T/Atlantic	238	12%	258	13%	1,490	75%	1,986 100%
T/Pacific	471	6%	662	9%	6,347	85%	7,480 100%
Total	780	5.4%	1,190	8.3%	12,387	86.3%	14,357 100%

Sources: Journal of Commerce/PIERS; Containerisation International Yearbook, 1995; Containerisation International, October, 1995.

More recent data on trade lane market shares has not been obtained as it is costly to purchase from collection agencies. However, information subsequently obtained from each carrier appeared to suggest that the market shares stated above remained relatively constant during the 1995-97 period, albeit with some change due to traffic growth experienced on each trade lane.

More recent data was obtained with regard to total liftings on all trades (e.g. East-West, North-South, and Intra-Regional combined) for the top 20 carriers at 1997 levels (see Table 5.8). This data shows that the top carrier overall in terms of TEU lifted in 1997 was the Chinese national line Cosco, with 3.25 million TEU, equivalent to 7.3% of world container traffic. Evergreen and Sea-Land were more or less positioned in joint second place, each lifting just over 3.0 million TEU, equal to 6.9% of world container traffic.

Although Maersk Line is the largest carrier in the world in terms of ship capacity on offer, the Danish company is in fourth place in terms of TEU lifted, with a market share of 6.5%. Clearly, certain carriers appear to perform rather better than others in terms of the ratio of lifted TEU compared to TEU capacity. However, a more useful indicator may be TEU-kilometres as it is likely that some carriers figure more prominently in short-distance Intra-Regional trades than in linehaul trades (e.g. Sea-Land's significant US domestic traffic).

Data provided in Table 5.8 shows also that the top 20 lines accounted for 70% of world TEU lifted in 1997, amounting to some 31.2 million TEU. More significantly, the top 5 carriers account for almost one third of TEU lifted (32.8%, or 14.6 million TEU). With further industry consolidation expected, the degree of carrier concentration in evidence already seems likely to continue.

Table 5.8 Top 20 carriers according to liftings (in TEU) for 1997

			000 TEU		
Carrier	TEU liftings	% share	Carrier	TEU liftings	% share
Cosco	3,250	7.3	Hyundai	1,332	3.0
Evergreen	3,080	6.9	Hapag Lloyd	1,100	2.5
Sea-Land	3,055	6.9	Yangming	1,062	2.4
Maersk	2,900	6.5	APL	1,002	2.2
P&O Nedlloyd	2,320	5.2	CMA-CGM	1,000	2.2
Hanjin	1,680	3.8	Zim Israel	973	2.2
NYK	1,660	3.7	K Line	850	1.9
OOCL	1,500	3.4	CP Ships	670	1.5
MSC	1,400	3.1	Safmarine	600	1.3
Mitsui OSK	1,350	3.0	UASC	429	1.0
Totals:					
Top-20 lines	31,213	70			
Other lines	13,147	30			
Total	43,360	100			

Sources: *Containerisation International*, November 1998, p. 55 and Cargo Systems report on *The Future of the Container Shipping Industry* (1999), p. 67.

5.7.2 Profitability

Table 5.9 outlines the financial performance of Sea-Land and Evergreen between 1991 and 1995, also noting the average industry performance among the top 14 liner operators for the years 1991-1993. Sea-Land revenues increased by 25% from \$3.2 billion in 1991 to \$4.0 billion in 1995. Net profit also increased over the period, from \$27 million in 1991 to \$42 million in 1995, although there was a significant fall during 1992-93. By 1995 Sea-Land appeared to be moving slightly ahead of the (very low) average industry profit level. In addition, while Sea-Land revenues and profits increased over the period, total assets employed remained virtually static (implying that the company was doing more with less resources).

The situation with Evergreen appeared to be very different. Evergreen's total revenues actually fell from \$1.2 billion in 1991 to \$1.1 billion in 1995, a reduction of just under 10 per cent. The fall in revenue reflected increased pressure on freight rates as opposed to diminishing volumes (Kadar & De Proost, 1997a). However, net profit increased over the same period from \$88 million to \$115 million in 1995, indicating that the Taiwan carrier was able to reduce unit costs sufficiently to offset price reductions. Assets employed by

Evergreen increased from \$1.5 billion in 1991 to nearly \$1.7 billion in 1995, a rise of 13 per cent and reflecting the regular introduction of new vessels and containers.

Table 5.9 Key financial indicators in liner container shipping, 1991-1995
(Million US\$)

Carrier	Indicator	1991	1992	1993	1994	1995
Sea-Land	Total revenues	3,238	3,148	3,246	3,492	4,008
	Net profit	27	17	12	26	42
	Total assets	2,088	2,020	2,043	2,050	2,074
Evergreen	Total revenues	1,230	1,187	1,189	1,175	1,105
	Net profit	88	107	106	110	115
	Total assets	1,505	1,580	1,594	1,650	1,680
Industry Average ¹	Total revenues	2,174	2,304	2,381	-	-
	Net profit	26	14	25	-	-
	Total assets	2,400	2,540	2,753	-	-

Sources: Derived from *Containerisation International* - December 1994, p.60, November 1996, p.53, June 1997, p.25, July 1997, p.46.

Notes: ¹Denotes average based on top 14 liner services.

Net profit is after deduction of interest and tax.

Inevitably there is a need to treat these net profit figures with a degree of caution. Any detailed financial analysis would need to consider a wide range of factors including vessel depreciation policy, borrowing rates, and the possibility for intra-group transfer pricing. Corporate cash flows would also need to be considered.

Nevertheless, Evergreen appears to have consistently outperformed the rest of the industry, typically achieving up to five times the amount of profit earned by its major competitors, and doing so with 25 per cent less assets. Compared with Sea-Land, up to 1995 Evergreen still earned almost three times the profit earned by the US carrier, despite the latter having more assets employed than Evergreen.

While Evergreen had more ships and equipment in use than Sea-Land, Sea-Land's investments in container terminals, intermodal transport, and other interests on the landside (e.g. consolidators) reflect its greater asset base. What may be regarded as curious, however, is the fact that Sea-Land's revenues increased significantly over the 1991-95 period, while its asset base remained

relatively static. A possible explanation for this may be that the company was moving away from owning a large proportion of its assets, especially ships and containers, much of which are now chartered or leased or alternatively shared with global partner Maersk. Sea-Lands' more extensive landside capability, coupled with its considerable liner activities on the protected US 'coastal' trades, and partly subsidised (albeit more expensive to operate) US-flag fleet, may also help to explain the US carriers higher level of income compared to Evergreen (separate figures for these activities are not available). However, it is evident that Evergreen, although earning considerably less total revenue than Sea-Land, appears consistently able to work its assets more profitably than either Sea-Land or any of the other major lines.

More recent figures relating to the financial performances of Sea-Land and Evergreen are provided in Table 5.10. Comparing these figures with those in Table 5.9 shows that assets employed by Sea-Land have increased by 18% over the 1995-1998 period, whereas Evergreen's assets have risen by two thirds. This reflects the different strategies adopted by both lines in relation to new vessel and container orders.

Sea-Land revenues actually fell during the 1995-1998 period to \$3.9 billion, and the company recorded a net loss of \$70 million in 1998⁴. However, Evergreen's profits have also fallen, from \$115 million to just \$32 million and \$34 million in 1998, reflecting continued downward pressure on rates.

Table 5.10 Financial performance of Sea-Land and Evergreen, 1997-1998
US\$Millions

	Total Revenues		Net Profit		Total Assets	
	1998	1997	1998	1997	1998	1997
Evergreen	1,639	1,337	34	32	2,792	2,280
Sea-Land	3,916	3,991	-70	56	2,452	2,576

Source: *Containerisation International*, October 1999, p. 38.

⁴ In the case of Sea-Land, failure to earn the cost of capital for any consistent period ultimately led parent company CSX to dispose of its international liner shipping activities (retaining domestic shipping and certain terminal assets). The firm was finally sold to global partner

5.8 Summary

Findings from this chapter reveal that although global shipping lines Sea-Land and Evergreen appear to provide virtually homogeneous service, they do so in very different ways.

Both firms were started from relatively humble beginnings, by entrepreneurial individuals who came to be recognised as industry icons in their own right; Malcolm McLean of Sea-Land as the father of containerisation, and Dr. Chang Yung-fa of Evergreen demonstrating that an independent line could survive and prosper against the traditional established conference structure, and provide a truly global service. Both firms are also relatively young in shipping line terms, Sea-Land becoming internationally established in container shipping during the 1960s, and Evergreen in the 1970s.

The predominant orientation of each firm differs and this appears to have much to do with their respective origins, and more particularly their leaders. Sea-Land is still today *intermodal oriented*, with a high degree of emphasis on landside intermodal and terminal activities, reflecting the historic fact that the line was created by a trucker. Within Sea-Land there appears to be rather less emphasis on ships than on landside capabilities. Conversely, Evergreen is very clearly *maritime oriented*, with a very strong emphasis on ships and containers, but with minimal investments on the landside. This is also a reflection of that company's heritage, originally established and still headed by a former sea captain.

The composition of Sea-Land's seagoing fleet of ships differs in a number of ways from Evergreen's. Sea-Land has a much smaller fleet overall (and further reducing relative to competitors), seldom builds new vessels, has a much older fleet profile, and often charters ships to meet demand. Sea-Land also makes extensive use of its global alliance with Maersk through which a significant number of slots are taken on Maersk's ships, most notably on the Europe-Asia trades where Sea-Land hardly employ any vessels at all.

Maersk Line in December 1999 for approximately \$800 million. (Source: Maersk Line Website – www.maersk.com).

Evergreen, on the other hand, is always building new ships, has a very large and continually expanding fleet, a more modern vessel profile, and seldom if ever charters linehaul ships. Furthermore, Evergreen's global route network is built around an intensive high-volume Round-the-World liner schedule which is supplemented by pendulum and end-to-end services, whilst Sea-Land employs traditional end-to-end services (mainly to/from North America), making use of Maersk's pendulum services where necessary.

Different approaches are also in evidence with respect to containers and terminals. Sea-Land's total container fleet is only half the size of Evergreen's. Moreover, nearly half of Sea-Land's container fleet is leased, whereas Evergreen leases under one third of its container fleet, which is way below the industry average for equipment leased to liner operators (also 50 per cent). While Sea-Land has a much greater emphasis on (more expensive) reefer container equipment than Evergreen, Evergreen are clearly heavily integrated into their container supply chain in that the Taiwan company manufactures containers in its own factories. The gap between these firms' respective container fleets is expected to widen further as Evergreen continues to add units on a regular basis, while Sea-Land has few new containers on order.

Both lines tend to call at the same global hub ports, with one or two exceptions. Sea-Land has adopted a policy of operating and investing in many of its own container terminals. This is also a legacy emanating from its creator, Malcolm McLean, who believed that control of terminals was a fundamentally important advantage for an intermodal transport operator. However, this belief may have been relevant in the days of almost constant dock labour union unrest (especially in the US and Europe), but since reform of dock labour practices in most countries, it may be that there is now less need for liner shipping companies to actually operate and control all or most of their own terminals.

Evergreen adopt a very different posture, preferring to use its significant container volume in order to leverage competitive port and container handling charges from common-user terminals at most of its hub ports. This approach implies relatively little investment in ports for Evergreen, although where there

is some strategic advantage to be gained from investing in a particular port (e.g. Panama, Taranto), Evergreen will make the decision to invest.

Sea-Land has recently implemented a new global matrix organisation structure by relocating all key operating and support divisions to its new global headquarters in Charlotte. This apparently allows the company to respond faster to the needs of global customers who increasingly demand a different level of service (e.g. a global contract), while still being able to deal with the needs of smaller shippers via local sales offices. Evergreen has preferred to leave its key operating division headquarters in the relevant region concerned, although responsibility for ships, equipment, IT, finance and overall strategic planning remains with the Taipei headquarters. Both lines tend to establish their own branch offices at key hub port locations, supported by independent agents in secondary markets. Sea-Land prefers not to register companies in each country of operation, whereas Evergreen takes the opposite approach, registering subsidiaries locally. Evergreen's policy is also to acquire shares in the independent agents it appoints.

Evergreen exhibits a longstanding dislike of price-fixing liner conferences, and generally remains outside of trade rate agreements, preferring to operate as an 'independent'. However, Evergreen has become a signatory to capacity stabilisation agreements, although only where such agreements are unrelated to rate setting. Historically, Sea-Land adopted a similar posture, although today the US carrier is a member of all the major rates and capacity management agreements covering the major east-west trades. Part of the reason for this change is that Sea-Land, over the past decade, has entered into a number of partnership agreements with conference member lines. Now in a global alliance with Maersk, a longstanding liner conference member, Sea-Land has little option but to join the respective rate agreements. As a 'stand alone' carrier having minimal partnerships with other lines, Evergreen believe that conference rate agreements simply protect weaker lines, and point to the 'insincerity' prevalent among conference lines in that they seldom actually keep to the agreed rates.

Sea-Land is estimated to control approximately 5.3 per cent market share of all container traffic on the main global East-West trades (1995 levels), compared to Evergreen's larger share of 8.3 per cent. On key East-West routes, Sea-Land appear to be especially weak on the Europe-Asia trade lane (market share of 1.5 per cent compared to Evergreen's 5.5 per cent), and also appear to be lagging behind on the Transpacific (6 per cent as opposed to Evergreen's 9 per cent), although both are virtually level on the Transatlantic (12 per cent and 13 per cent respectively). However, Sea-Land is very strong on the so-called 'domestic' routes in the US which are protected by the Jones Act (i.e. these trades are reserved for US companies, ships, and crews only).

Whereas Evergreen appears to have captured a relatively balanced and significantly greater market share across the principal global East-West trade lanes than Sea-Land, Sea-Land's dominance in US domestic container trades levels things somewhat, at least in terms of overall traffic volumes. In terms of containers lifted annually, both carriers are in virtually joint second place in the world with around 3 million TEU.

Profitability in liner shipping is more often than not something of a contradiction in terms, with many lines making losses in recent years. This has resulted in further industry consolidation after a number of bankruptcies and takeovers. Until the mid-1990's, Sea-Land consistently recorded a profit level which more or less matched the very low industry average of between 1-3 per cent. However, Sea-Land achieved this level of profit (and higher turnover) on a significantly reduced asset base relative to the industry average. This tended to reflect Sea-Land's strategy whereby the line invested less in ships and containers (relative to its competitors), instead using the assets of global partner Maersk Line to a greater extent.

Evergreen was, until the mid-1990's, regarded as one of the most profitable carriers. From a lower asset base relative to the industry average, profits tended to be higher than average. In recent years, however, due to a combination of increased competition, lower freight rates, and sustained investment levels, ROI has fallen just below the industry average, and profits have also declined.

Chapter 5 has therefore highlighted a number of significant differences between Sea-Land and Evergreen. These differences reflect contrasting strategies in liner container shipping. Thus, it is evident from this analysis that although Sea-Land and Evergreen provide a relatively homogeneous global service (at least as far as many shippers are concerned), they do so through implementation of what are very different strategies. Chapter 6 extends this comparison through the application of a theoretical framework that permits both companies to be analysed in more detail, based on empirical evidence (i.e. following in-depth interviews with management of both firms). The analysis evaluates organisational pressures faced by what are essentially global businesses, pressures relating to the often conflicting need for global corporations to be both locally responsive as well as globally integrated.

CHAPTER 6

GLOBAL INTEGRATION AND LOCAL RESPONSIVENESS IN CONTAINER SHIPPING

6.1 Introduction

Based largely on secondary data, Chapter 3 provided a macro analysis of the global container shipping industry, while Chapter 5 illustrated via micro analysis the quite different strategies adopted by two leading carriers, Sea-Land and Evergreen, in providing global container transportation services. Chapter 6 seeks to extend this micro analysis further through in-depth appraisal of the pressures for global integration, and for local responsiveness, facing container shipping businesses. What are these pressures? How do global carriers respond to them? And why do carriers respond in different ways? These are the key questions Chapter 6 seeks to answer.

Acknowledging that labelling an industry as either “global” or “multidomestic” may hide broad variations in the underlying managerial tasks involved, Prahalad & Doz (1987) developed a methodology - *the integration responsiveness framework* - for capturing, or for understanding, what they termed as the “existing rules of the game” in an industry. This methodology was discussed in Chapter 4. No other strategic management framework were found that enabled such analysis to be undertaken.

The methodological framework proposed by Prahalad & Doz is employed here as a template (Yin, 1984) to help establish the pressures facing global container lines, pressures which make global coordination and integration critical, coupled with pressures which imply a degree of local responsiveness is still essential. This methodology is applied to the two companies whose contrasting strategies constituted the focus of the previous chapter - Sea-Land Service Inc. of the USA and Taiwan’s Evergreen Marine Corporation. The primary focus concerns pressures facing the collaborating organisation, Sea-Land, however, sufficient additional information was obtained with regard to Evergreen to allow for a degree of comparison.

The aim is not simply to compare pressures for global integration and local responsiveness facing Sea-Land and Evergreen; rather, it is also to identify and analyse the main pressures which must face all global carriers to a greater or lesser extent. Further, the objective is to ascertain carrier *strategic responses* to

such pressures, and this is accomplished through in-depth analysis using a structured methodological framework.

Information has been gathered through a series of face-to-face interviews with carrier executives, with primary data being supported where applicable by relevant secondary data. A detailed list of interviews is provided in APPENDIX A. A total of 25 interviews were conducted between 1993 and 1996, 21 with the collaborating organisation Sea-Land, and 4 with Evergreen. Eight of the first 12 interviews with Sea-Land management (I:1 to I:12), and 4 with Evergreen personnel (I:13-I:16) were specifically related to the questionnaire (see APPENDIX B) data gathering exercise employed in this chapter. The 9 further interviews held with Sea-Land executives in the USA during the summer of 1996 (Interview numbers I:17-I:25), were more specifically related to chapter 7. However, the opportunity was also taken to ask these respondents a number of questions relating to the analysis in this chapter, hence the inclusion of comments from these latter interviews in Chapter 6 also. Comments made by respondents are referred to in the text of this and subsequent chapters by noting the relevant interview number (e.g. I:17 refers to interview number 17).

Interviewees were asked a series of questions relating specifically to each of the pressures set out in the Prahalad & Doz methodological framework. Questions were adjusted to take account of unique factors associated with liner container shipping. A copy of questions used is provided in APPENDIX B. Additional secondary information has been included, where appropriate, within the analysis. The structure of this chapter essentially follows the framework headings (see section 4.7 for a full explanation of the framework).

6.2 Pressures for global strategic coordination

6.2.1 Importance of multinational customers

Prahalad & Doz maintain that the dependence of a business on multinational (MNC) customers imposes a need for global strategic coordination. When an MNC customer is operating on a global basis, it may produce a standardised product at different locations around the world, or seek to obtain identical components and/or services (such as transport) in different parts of the world. To achieve cost savings and to improve its control over suppliers, the global MNC may move towards sourcing components/services from a single supplier capable of producing/delivering on a worldwide basis. In addition to central purchasing, the MNC may also monitor (from the centre) the supplier's quality and delivery performance at each of its production locations.

To keep such a customer satisfied the supplier will have to standardise prices, quality and delivery performance worldwide. Moreover, it may not be able to rely on its affiliates around the world to achieve an identical level of service without some central control and setting of priorities. This implies it will have to coordinate relations with the customer on a global basis.

In the case of Sea-Land, the company has some 164,000 customers worldwide but only 5,000 (i.e. 3 per cent) of these account for 93 per cent of container flows (I:11). While smaller accounts tend to have better margins, the sheer volume of traffic emanating from larger shippers means the latter must be treated differently. The implication is that bigger volume customers receive high priority.

Interviewees suggested that many of the larger customers also tend to be receivers as well as shippers of cargo, in that movements are often between subsidiaries (I:6; I:11). Car manufacturers are a case in point, with GM and Ford, until relatively recently mainly concentrated in the US and Europe, but who now have production plants in many other countries. Companies such as Proctor & Gamble, Pepsi-Co, Nestle, and Philips also manufacture and source products worldwide. Nestle subsidiaries ship over 150,000 TEU worldwide each year and control most of this volume from their Geneva headquarters, while

Philips controls 90% of its worldwide flows from Eindhoven (I:11). In effect, these large MNC's consolidate their worldwide logistics functions centrally in order to negotiate global contracts with major transportation and other suppliers. Greater volumes would also be expected to enhance shipper bargaining power, putting further pressure on freight rates.

As early as 1994 Sea-Land had secured between 30-40 global accounts in the US; that is, contracts to transport customer's goods on a worldwide basis. Inroads have also been made in Europe to secure global contracts. Pressure is coming mainly from shippers themselves, with companies such as Nestle trying to bring down the number of container shipping suppliers that it deals with worldwide to 10 or less (from 40-50 before). Negotiating previously with so many carriers over rates proved to be a time-consuming burden for shippers. In addition, customers now want just one point of entry within each carrier resulting in carriers such as Sea-Land appointing an individual staff member to work with a specific customer on a global basis. Nevertheless, although most of their traffic is committed to the major lines, many large shippers still "*throw scraps at niche carriers*" working in single trade lanes to ensure there remains a fair degree of price competition (I:18).

In practice, Sea-Land suggest that not all markets/trades are the same as far as global shippers are concerned. For example, global shippers represent only about 10-15% of business in Mid East and Indian Sub Continent markets; in these markets smaller shippers are more prevalent (I:18). Nevertheless, the view within the company is that things are changing fast as the larger MNC's make inroads into these developing markets also.

Evergreen accept that the proportion of freight moved on behalf of MNC's is increasing and view this as a threat; MNC's are regarded as very hard negotiators on rate levels, using their large volumes to leverage agreement on rates. According to Evergreen, Black & Decker in the UK combined its traffic volume with its other plants in Spain and Italy to negotiate a new rate agreement with Evergreen for all its shipments to the US (I:13). However, each trade is considered to be different. For example, while the US trades are dominated by

MNC's, Asia and Europe are rather more fragmented with, suggests Evergreen, larger numbers of smaller shippers.

This is not to say that transport costs are *the* most critical consideration amongst manufacturers (Schoenberger, 1984), but it is clearly important. Yet, with certain types of goods (e.g. low value goods sensitive to transport costs), the transport cost element is considered the most critical aspect. Indeed, where commodity market prices have fallen significantly, this results in pressure for lower freight rates, and examples of this phenomenon include goods such as Colombian coffee, Australian wool shipments, and dried fruit and nuts from the USA (Boyes, 1993a; Fossey, 1992).

Evergreen have a very mixed customer base that includes a large number of small customers. Global contracts are regarded as "*a minefield area*" for Evergreen, partly because its regional headquarters (in Taiwan, Tokyo, Hamburg, and New York) each decide outbound cargo rates from their respective regions and it is difficult to get agreement between them (I:14). Three or four separately accountable pricing divisions within a single liner shipping company, all seeking to maintain a high degree of local responsiveness, adds to the complexity in trying to deal with a shipper seeking a single global contract.

Sea-Land has adopted a pro-active policy of entering emerging markets prior to new manufacturing plants being established in such locations (e.g. in Vietnam, India, Russia etc.). This enables the company to develop a presence in the market and be ready to exploit new traffic flows as soon as they begin. "*Companies like Proctor & Gamble want to be everywhere in the world and this means global carriers must also be present*", according to Sea-Land (I:11).

Sea-Land regards Evergreen as more of a port-port carrier serving mainly forwarders and NVOCC's, rather than a door-door intermodal transportation service provider (I:21). Evergreen admit this is true, up to point (I:16). But carrying for third parties may not be such a bad thing given the reported annual worldwide container flows of major forwarders such as Kuehne & Nagel, which exceed 230,000 TEU, are even greater than companies like Nestle (Eller, 1992).

However, it seems inevitable that the demands of global customers will dictate a need for global coordination. In Sea-Land's case this implies

significant pressure on the organisation towards global coordination, yet the presence of many local customers also suggests a need to retain a degree of local responsiveness. In the case of Evergreen, by contrast, there appears to be rather less influence from global customers, and consequently less need for global coordination, this being reflected in the regionalised organisation structure and pricing responsibilities of the company. Yet this could change as more shippers request global contracts.

6.2.2 Presence of multinational competitors

“The presence of competitors who operate in multiple markets indicates the potential for global competition. Consequently, it is crucial to gather intelligence on competitors across national markets, to understand their strategic intent, and to be ready to respond to their actions wherever most appropriate. The presence of multinational competitors calls for global strategic coordination.”

(Prahalad & Doz, 1987: p.19).

The following two subsections consider how global carriers are able to monitor the activities of their competitors, and to assess the different types of competitor in the marketplace.

6.2.2.1 Monitoring competitors

Multinational competitors may threaten the profits of a business by entering new markets, setting up in new low-cost operating locations, and by launching new or improved products/services or cutting prices. To counter serious competitive threats, a business may need to respond either by replicating competitors' actions or by retaliating in another part of the world where it can impact the profits of adversaries. However, it may not be effective to rely on affiliates around the world to respond in the way they judge to be the most appropriate; such activity requires central planning and coordination.

Sea-Land executives highlighted a number of ways in which the activities of competing lines can be monitored. For example, competitors' new ships are

monitored, including date of delivery, vessel size and speed, and trade deployed (I:8). A company really needs to know the trade a competitor's newbuilding is to be deployed on, however, and in the case of global competitors such as Evergreen, it is more difficult to establish which trade lane new vessels are to be deployed as these firms have so many routes. Carriers may nevertheless indicate their intent if it is known that they want to phase out older ships in their fleet. New and faster ships are perceived to be a significant competitive threat because they will tend to shorten transit times and this will be attractive to certain shippers, at least in the short term until other lines have time to react. Sea-Land are relatively fortunate in this regard through the company's global alliance with Maersk Line because the latter currently operate some of the largest and fastest vessels in service (i.e. 6,000 TEU and 25 knots).

Sea-Land also obtain information through discussions with other carriers (I:23). This may be via discussions with global partner Maersk, with VSA partners, or through contact with other lines seeking a joint venture or slot-sharing arrangement. Conference meetings represent a further opportunity to obtain information and this avenue is not open to Evergreen to such an extent as the latter tends not to participate in price fixing conferences with competitors. Conference meetings can also be used to send misinformation about a carriers intent. Whereas the old consortia arrangements were regarded as "*alliances among friends*" (e.g. establishment lines, conference members of long standing etc.), most lines are now involved in "*alliances among enemies*", including Sea-Land (I:23). Evergreen, by contrast, are generally referred to as a "*stand-alone*" carrier, although this is becoming less so as the latter enters into more joint services with its Italian partners on a limited number of routes.

Trade publications can also offer a rich source of information with regard to the intent of competitors. Information may also be supplied by outside consultancies' specialising in liner shipping market research, such as Mercer Management Consulting, Drewry, and MDS Transmodal. In addition, Sea-Land closely monitor export/import trade publications in which trade contracts are announced as these contracts will eventually result in goods flows requiring transportation (I:6).

6.2.2.2 Main types of competitors

According to Sea-Land, *“real competitors are those you constantly meet in the marketplace, and who fight for your freight, like P&O and Maersk”* (I:8). Of all global competitors, Maersk Line is generally the most respected by Sea-Land executives in terms of service quality, efficiency, and overall management (I:4). Evergreen is regarded as a *“price aggressor”* with a different philosophy and cost pattern, whereas Sea-Land views itself as a *“low cost, high quality, reliable carrier”* (I:20). Quality and low cost are viewed by Sea-Land as essential prerequisites to compete against Asian carriers like Evergreen. This emphasis on taking costs out of the system is reflected in a Sea-Land saying - *“it may be nice to have but do we need to have?”* (I:19); in this context, the comment related to ships.

Evergreen is considered to be *“only dangerous from a pricing perspective as they (i.e. Evergreen) cannot provide as comprehensive a service as Sea-Land”* (I:9). The perception of Evergreen is that they are only a real threat on a port-port basis, not for intermodal transport as, according to Sea-Land, *“inland transport is their (i.e. Evergreen’s) main weakness”* (I:9). Evergreen dispute this, pointing to the company’s extensive use of double stack rail links in North America (I:15). However, unlike Sea-Land, Evergreen admits to not being active in markets such as Eastern Europe, and to preferring containers not to be destined for consignees far inland from seaports in an effort to improve container utilisation.

Like Sea-Land, Evergreen also suggests the same carriers tend to be present in the global marketplace, but asserts that regional competition is more severe wherever national lines are strong. For example, P&O are particularly strong in the UK, Hapag Lloyd in Germany, COSCO in China, TMM in Mexico, Italia/Lloyd Triestino in Italy, Japanese carriers in Japan, and US carriers in the USA. In essence, many shippers still prefer to use a shipping line of the same nationality (as the shipper), suggest Evergreen.

Numerous regional niche carriers specialising in the one trade lane such as ACL, CAST and Lykes on the North Atlantic, Safmarine to South Africa, and Andrew Weir to the Indian Sub Continent, also represent a threat to the global

carrier. There are few barriers to entry for such lines and in instances where a small carrier goes bankrupt, very often the same people start up again under a different name (I:19). For instance, in 1993, American Contract Freight Lines, a new line employing chartered tonnage, ceased to operate after only two sailings across the North Atlantic (Tirschwell, 1993). However, the introduction of such new services may be hampered where a number of major shippers are committed by existing service contracts to other carriers (Crichton, 1992a). Thus, global and/or service contracts effectively mean there would be switching costs if these agreements were broken, thus limiting the advance of any new entrant.

Within each region there are also numerous small intra-regional carriers. For global carriers such as Sea-Land and Evergreen, who now carry intra-regional traffic on their mainline vessels, particularly in Asia, these regional carriers (who may formerly have provided global carriers with a feeder service) are now also a competitor.

Thus, the presence of global competitors requires an understanding, through constant monitoring, of their strategic intent, and this necessitates global coordination to facilitate an adequate and appropriate strategic response. Sea-Land can monitor competing lines closely through alliances and conference membership, whereas Evergreen, being more of a stand-alone carrier, may have to rely on other intelligence gathering techniques. Each line differs in terms of intermodal capability, with Sea-Land apparently able and willing to penetrate markets far inland from ocean terminals, Evergreen less so. The evidence does suggest that, to a large extent, both Sea-Land and Evergreen's competitors are virtually the same companies. However, while the main threat for each firm comes from other global carriers, local competitors and lines with a strong national customer base also remain a significant threat in each respective trade, suggesting a need for global coordination, yet also a need for a locally responsive posture.

6.2.3 Investment intensity

“If an aspect of the business is investment-intensive (e.g. R&D, manufacturing), the need to leverage that investment increases the need for global coordination.”

(Prahalad & Doz, 1987: p.19).

The larger the initial capital investment involved in a project, the greater will be the need to maximise the utilisation of the assets in order to achieve a satisfactory return, and an acceptable payback. In instances of high investment, a rapid achievement of economies of scale and scope are likely to be important objectives. This may require high sales volumes at an early date combined with minimum downtime and maximum efficiency in operating the equipment. As Prahalad & Doz maintain, worldwide product strategies have to be developed and implemented quickly to make the initial investments profitable. These strategies may require coordination of marketing and operating units from the centre. The centre may also adopt the strategy of forming alliances to share the costs and risks of the investment. Again, this will also require central coordination to ensure the smooth running of the alliance and the effective cooperation of the partners.

Global container lines must make significant investments in hardware such as ships, containers, and terminals. There is also a need to establish a worldwide network of offices, in addition to telecommunications and IT links, plus options on the landside such as warehousing and distribution, road haulage and rail wagons. The following sections consider each of these investments in more detail.

6.2.3.1 Ships

Container ships are getting bigger, more expensive, and now also have much greater reefer capacity which further adds to costs (I:18). Lines can acquire second-hand tonnage instead of newbuilds, and Sea-Land expect to see increased availability of cheap second-hand ships in future as more lines exit the industry. The US carrier benefited significantly when it acquired twelve 4,400

TEU 'econships' formerly owned by United States Lines when the latter went bankrupt in 1987; these vessels were purchased, almost new, for about one third of the newbuilding cost.

Sea-Land are now more interested in sharing ships (and other equipment) with other carriers and in using other carriers ships than in building a vast fleet. Vessel sharing arrangements "*offset a large portion of fixed costs for ships*" and "*partnerships limit the cost and spread the risk*", according to Sea-Land (I:6). This is significant as some 50% of the costs of a container line are fixed, and a large proportion of these fixed costs (15%-20%) relate to the ship (I:10). The long delay in Sea-Land orders for new ships was believed to also result from uncertainty surrounding changes to the US government's Operational Differential Subsidy (ODS) Scheme for US flag ships (Roberts, 1992).

Evergreen are "*very tight on vessel costs and use Asian crews*", according to Sea-Land, the implication being that this is one major reason behind the Taiwan carrier's consistently higher than industry average profit record (I:4). However, this only partly explains any advantage Evergreen may have in connection with vessel expense. The company also benefits from an attractive tax regime in Taiwan for significant capital investments in assets such as new ships. Moreover, Evergreen's ships are financed by Japanese trading houses and are built in Japanese yards which are subsidised by the state. Evergreen is always building ships in large numbers and receives volume discounts from yards in return. The fleet is very modern and on-board operations highly computerised; for example, ships' computer systems allow for one man to feed in loading information and finalise the stowage plan very quickly. According to Evergreen, "*Asian carriers are more high-tech than establishment lines*" and "*carriers like Sea-Land rarely launch a new ship*" (I:14). A series of five 4900 TEU ships delivered to Evergreen from Mitsubishi in 1996-97 costing a total of nearly \$500 million, represents a 'typical' newbuilding sequence and cost for the line. Evergreen suggests its purchasing power is greater than most lines, with the exception of Maersk. This, it is argued, enables the carrier to secure more attractive deals with shipbuilders (I:16), notwithstanding the fact that the market

environment for newbuildings does fluctuate and lines can be caught out (Wastler, 1993).

6.2.3.2 Containers

Evergreen owns plants in Asia which manufacture and sell containers. A direct consequence of this is that there are constant flows of new containers into the fleet and Evergreen is “*never short of containers*” (I:13). Consequently, Evergreen make relatively limited use of leased containers compared to other lines like Sea-Land, with the leased portion of the fleet seldom exceeding 30% compared to an industry average of 50% for most lines. Ordinary dry freight 40’ containers cost around \$3,500-\$4,000 each (typically the most common size of unit is 40’), which means a fleet of 100,000 x 40’ dry cargo containers has a replacement value of some \$400 million.

Sea-Land has one of the largest reefer container fleets of all carriers and around half of its entire container fleet is owned by the line, the remainder on lease. Reefer containers are particularly expensive, costing up to \$30,000 each. In 1992, when the Korean carrier Hanjin decided to enter the reefer market, it spent \$35 million on just 1,000 containers.

The price of new containers has fallen in recent years, but this illustrates the large investments necessary by carriers in containers alone. Sea-Land’s policy now is to promote the use of what is termed a ‘grey box’, that is, a “*neutral container, without logos, that can be easily shared among carriers*”, in an effort to minimise equipment costs (I:2). Sea-Land believe that “*customers do not pay extra just for the name on a box*” and the company is now using its partners containers whenever possible.

6.2.3.3 Terminals

Terminals are considered a key strength within Sea-Land. Sea-Land controls, mainly through long-term lease deals with respective port authorities’, more than 20 terminals worldwide. According to one inside source, “*control of terminals means control of destiny*” (I:3). Malcolm McLean, the founder of Sea-Land, believed strongly in controlling terminals and this legacy lives on within

the company. Terminals are nevertheless very expensive. In 1991, Sea-Land sold a one third share of its Hong Kong terminal services company for \$96.7 million, a transaction representing a substantial return on investment which still allowed Sea-Land to retain control over terminal operations. The transaction was intended to improve the balance sheet and free up cash flow.

In contrast, and with relatively few exceptions, Evergreen is really a common-user terminal customer (i.e. the company mainly uses terminals owned and operated by other organisations) at most of its ports of call. Evergreen has some investment in what it regards as strategic ports, notably in Taiwan, Thailand, Indonesia and Panama, and these lease arrangements with landlord port authorities in respect of terminal land, leaves Evergreen to invest in superstructure such as cranes, in addition to undertaking responsibility for terminal operations. In general, however, Evergreen ships call at common-user terminals in most ports, leaving the necessary infrastructure and equipment investments to port authorities and local stevedores.

Evergreen always negotiates a priority deal in its ports and has sufficient volume in circulation to leverage a very attractive price (I:15). Unlike Sea-Land, where own-terminal operation is considered a form of control, Evergreen takes the view that there are many alternative ports each vigorously competing for its business. This enables Evergreen to play off one port against another, or two terminals in the same port, in order to secure the best deal and without any need for the line to make significant capital investments in infrastructure. Panama was considered an exception due to the lack of suitable facilities there, and the strategic location of the port as a potential Latin American hub.

In some respects Sea-Land is now withdrawing from investment in certain assets. This fits in with the fact that Sea-Land is now *“Wall Street driven and what Wall Street hates about shipping is things like the effect of fuel price hikes, collision at sea, earthquakes - assets are often casualty-prone”* (I:20). Furthermore, the customer *“does not care whose assets are used”*, stated one Sea-Land employee (I:20), and *“its a macho thing to own ships”*, suggested another (I:19). The reality, according to Sea-Land, is that assets are expensive things and it may be better to let others (e.g. Maersk?) do the investing in assets

if possible. This philosophy also appears to mirror the worldwide trend towards contracting out exhibited in many other industries.

Sea-Land sees itself becoming more of a specialist in terminal management, inland transport, and providing value added services. While the company still operates ships and provides containers, it is not considered unfeasible that Sea-Land will in future become more like a NVOCC (non vessel operating common carrier), taking care of cargo inside a country, with Maersk or some other line responsible for the trunk hauls. *"We could leave moving boxes to others....when you have a good third party it doesn't matter who is in the middle providing the trunk haul"*, suggested one Sea-Land manager (I:23).

6.2.3.4 Local representation and IT

Sea-Land formerly employed independent agents in most countries but the practice is now to have its own staff in each location if possible. New offices have been opened in India and in China. In certain *"difficult"* markets local agents are used, such as in Greece, Italy, and in the Mid East where *"trading families"* are required by law to represent foreign lines (I:8). However, Sea-Land now prefer to use their own staff wherever feasible and as the company expands further - *"we have doubled in size in the past six years"* (I:21) - overseas representation will continue to be a large cost. Evergreen, in contrast, mostly uses agents in which the Taiwan line purchases shares, although the company maintains its own offices in the main markets (e.g. US, UK, Taiwan).

In relation to IT, Sea-Land's 'DYM\$' system (Dynamic Yield Management System) enables the line to calculate the net profit for each potential container move anywhere in the world, inclusive of factoring in repositioning costs. DYM\$ represents a significant investment (\$2 million) in a type of technology which was previously used mainly by airlines. Sea-Land believes the next stage of IT development must be for shippers to make bookings via the internet and this has already started (I:8). Sea-Land also want to use IT to control shipments, to feed back information such as the position of cargo (track and trace), and are currently working on supply chain management and information systems management.

Another IT system called Encompass was introduced by a number of major container lines in 1992 at an initial cost of \$10 million, although investment has since risen to nearer \$100 million. Encompass allows global trading partners - shippers, consignees, forwarders and carriers - to communicate electronically, regardless of the type of their internal computer system or where they are located. The system also permits intermodal partners to expedite the movement of their goods, check the status of cargo in-transit, select transportation routes and modes and manage inventory levels better (Siedeman, 1992).

Notwithstanding the fact that the emphasis on investments for both Sea-Land and Evergreen differs with respect to certain assets, the overall intensity of investment (i.e. approximately \$2 billion for sufficient ships, containers, terminals etc. necessary to provide a global service) indicates that a high level of global coordination and integration is necessary. However, a number of significant differences exist in relation to resource configuration exhibited by both carriers. Sea-Land has preferred to acquire second-hand ships, builds few new vessels, and makes extensive use of its global partner Maersk's more advanced fleet. Conversely, Evergreen are always building new technologically advanced ships in low cost yards, and benefits from an advantageous home country tax regime in respect of capital investments. Sea-Land mainly lease containers, while Evergreen owns most of its fleet which are manufactured in its own low cost plants in Asia. Sea-Land lease and operate most of its major terminals, whereas Evergreen tend to use third party terminals unless a port/terminal is considered to be a particularly significant strategic location worthy of leasing and operating. Ultimately Sea-Land's primary focus appears to be towards terminals, landside intermodal activities, IT and added value functions, whilst Evergreen's main orientation lies towards operating a fleet of ships and containers. Other differences exist in relation to overseas representation, Sea-Land preferring to have its own offices, Evergreen largely using local agents (many of which it also part owns) to represent its business activities.

Table 6.1 summarises the key differences identified between Sea-Land and Evergreen under the heading of coordination. Sea-Land has a clear focus on

larger global customers, whereas Evergreen’s focus is on all customers. Both lines face relatively similar competitors, who are primarily global, but also regional. In terms of investment intensity, Sea-Land focus on equipment sharing, terminal and landside activities, and use of IT to enhance yield management and value added activities, whereas Evergreen concentrate on equipment owning, maritime operations, and the application of IT to enhance ship and container operations.

Table 6.1 Global coordination differences between Sea-Land and Evergreen		
Sea-Land		Evergreen
<i>Focus on global customers</i>	MNC Customers	<i>Focus on all customers</i>
<i>Global and regional</i>	MNC Competitors	<i>Global and regional</i>
<i>Focus on: equipment sharing terminals/intermodal IT-yield management and 'value added'</i>	Investment intensity	<i>Focus on: equipment owning maritime operations IT-ships and container flows</i>

6.3 Pressures for global integration of activities

6.3.1 Technology intensity

Technology intensity and the extent of proprietary technology often encourage firms to centralise ‘production’ in only a few selected locations. Having fewer sites allows easier control over quality, cost, and new product innovation. Centralising ‘product’ development and operations in a few locations results in global integration, particularly when markets are widely dispersed.

According to Prahalad & Doz, businesses using complex technological processes which are expensive to set up, are constantly being upgraded and require high levels of skill to operate and maintain, may try to limit the number

of sites worldwide on which they employ that technology. This is also the case with R&D establishments in businesses where proprietary technology is important and where scientific breakthroughs are key to competitive advantage. If the technology is developing rapidly, product life cycles are short, and frequent new product launches occur, concentration on a few sites may encourage the most effective employment of the technology. By contrast, businesses where low technology is required and where products are stable and have long life cycles, will not feel the same pressure to concentrate and maximise the productivity of their R&D or operating facilities.

Global container carriers centralise their operations at relatively few hub ports, and most global carriers call at virtually the same hubs (e.g. Hong Kong, Singapore, Los Angeles, Rotterdam etc.). These hub ports (of which there are around 30 worldwide each handling in excess of 1 million TEU per annum) represent the principal 'operational centres' in the field for each line (I:7). The typical global carrier makes regular calls with various service strings at between 20-30 hub ports worldwide, in addition to a myriad of feeder ports served by owned/chartered or third party feeder ships. Centralised operations in relatively few locations (i.e. hub ports) results in a need for global integration, particularly with regard to vessel scheduling and equipment flows.

Lines tend not to enjoy proprietary technology advantage for very long as advancements in container handling (e.g. automation) or ships tend to be easily and quickly replicated by other ports and carriers. A key influence in the choice of hub port, according to Sea-Land (I:3) and others (e.g. Baird, 1997a), appears to be ship draft, with bigger vessels now demanding deeper water.

Competing lines can relatively easily acquire advanced vessels, as Nedlloyd has with its five 3,500 TEU hatchless Ultra Container Carriers (UCC's) specially designed for faster port turnaround. Yet, according to the Port of Felixstowe (I:12), hatchless vessels have no real gain in terms of speed of turnaround as the extended cell guides (i.e. steel cells extending well above deck height) means the crane spreader must be lifted higher than usual. Others disagree (e.g. Bendall & Stent, 1996), pointing to the avoidance of lashing and opening/closing hatch covers. In any event, in terms of terminals, ships, or

containers, the extent of proprietary technology in container shipping assets appears to be minimal. While ship and terminal technology may continue to be improved, or perhaps more aptly described by Sea-Land as “*occasional tweaking*” (I:8), the technology of containerisation is itself relatively mature.

An area Sea-Land sees itself building a lead is in information and how this is used through IT systems. Sea-Land’s DYM\$ system, for instance, which is controlled from the company’s HQ in Charlotte, North Carolina, represents a single global operation centre which is dependent upon a very high degree of global integration in order to be effective (I:22). As yet Evergreen Line do not have an equivalent system in place, preferring instead to devolve pricing responsibility to each regional HQ around the world. Moreover, “*Evergreen agents are not all EDI connected globally*” and this was considered something of a weakness by the carriers own UK staff (I:15). Sea-Land’s Global Division is using information systems to provide global customers with a central unit to deal with “*thus facilitating responsiveness through a single integrated network*” (I:18). Responsiveness, in this instance, appears to reflect a global rather than a local perspective.

Thus, Sea-Land and Evergreen, to a very large degree, make use of similar ports and terminals and related cargo handling technologies. Current ship and intermodal equipment technologies are available to all lines, although it is evident from the earlier analysis that Evergreen has a constant flow of newbuildings into its fleet with smaller units cascading into the fleet of feeder affiliate Uniglory. While this may therefore appear at first sight to represent an Evergreen advantage, it is also evident that Sea-Land makes substantial use of partner Maersk’s constant flow of advanced newbuild ships, although the sustainability of this latter arrangement might be questioned.

Although there is some evidence that ship technology is relatively stable, it nevertheless appears to be the case that ships are being replaced on major routes with greater rapidity than previously (e.g. the largest vessels are typically placed on the Transpacific or Europe-Asia trades first, then shifted onto other mainline routes as new and larger vessels are introduced). Both lines also make extensive use of third party intermodal truck and rail service suppliers. Sea-Land has built

up what appears to be a lead in yield management IT systems tailored to intermodal container transportation, however, it is questionable if any 'lead' as such is sustainable as other lines catch up and introduce the same or even more advanced IT systems.

6.3.2 Pressure for cost reduction

Prahalad & Doz assert that global integration is often a response to pressure for cost reduction. The search for cost reduction is likely to be greatest in those businesses where competition from large multinationals is most intense. Cost reduction strategies can take either or both of the following two forms:

- ❑ An emphasis on economies of scale through operating in larger and larger facilities so that cost per unit of output is minimised and learning curve advantages are maximised;
- ❑ A search for economies of scope and the avoidance of duplication between affiliates across borders. This may be achieved through greater control of activities and the integration of business functions on a regional or global scale. It may involve the complete elimination of some departments or offices in some countries.

The search for cost reduction is another reason behind the formation of international alliances and collaborative agreements. Single sourcing and just-in-time supply procedures can also promote greater integration of activities between affiliates as liaison with suppliers becomes increasingly handled in one location rather than several.

Pressure for cost reduction in container transport is continuous; constantly reducing freight rates coupled with increased competition and minimal opportunity for service differentiation, has made cost reduction a necessity rather than an option. This is mainly a consequence of a high fixed cost element for the industry, traditionally resulting in a relentless drive for volume (Turner,

1994), often at any price as long as it was giving at least some contribution to fixed costs.

Sea-Land was formerly more heavily fixed cost-based compared to other lines but the situation is now different. Developing partnerships on a global basis has allowed Sea-Land to cut expenses. *“Partnerships are the most significant factor in taking costs out and improving service levels in order to increase overall sales revenue”*, according to Sea-Land (I:21). Partnerships have allowed Sea-Land to share ships, terminals, containers and, in the process, still enjoy the benefits of large economies of scale which a stand alone carrier would have difficulty achieving.

Critical in this is container sharing as the *“real task (of a global carrier) is solving equipment imbalances”* (I:11). Equipment imbalances tend to be fairly consistent and this is where the DYM\$ system helps Sea-Land to optimise its empty repositioning in a cost-effective manner.

Sea-Land has placed a significant number of its ships under foreign flag registries, such as that of the Marshall Islands, which is among the cheapest of maritime flags (Vail, 1993). Flagging out is estimated to have saved the company around \$3 million a ship each year, mainly through reduced crew costs (Beargie, 1993). Sea-Land's five 4,000 TEU newbuildings delivered from Japanese yard IHHI in 1995/96 are all foreign flagged. Sea-Land chose the Marshall Islands registry to satisfy national security requirements; an agreement between the US and the Marshall Islands provides that control of vessels registered in the Marshall's can be assumed by the US government in a national security emergency. Another factor that Sea-Land claim to have influenced its decision to flag out has been the decline in US worldwide military cargoes which, in terms of carriage costs, fell from \$506 million in 1990 to \$253 million in 1995 (US flag carriers are given preference for this traffic). Military shipments accounted for a significant 10% of Sea-Land's \$3.1 billion income in 1992 (I:20).

Sea-Land has also sought to further reduce costs through restricting its already limited dependence on independent liner agents. The largest carriers, with the exception of Evergreen, prefer to have their own staff at each location

to provide close contact between in-house specialists and customers, clarify corporate identity, integrate EDP systems, control inland logistics, and avoid the added cost, complexities and confusion surrounding agency commissions (Crichton, 1992b). Evergreen take an opposite approach, preferring to appoint agents (albeit many of which are part-owned) in most host country markets.

A hub port is more or less the equivalent of a large plant serving multiple markets, acting as an interface between sea and land transport in which the inputs and outputs consist of containers, full and empty. Sea-Land and global partner Maersk have a joint annual throughput of around 1 million TEU at each of their main hub ports (e.g. Long Beach, Rotterdam, Algeciras, Hong Kong, Singapore and Koahsiung). This measure of throughput provides Sea-Land with enormous economies of scale and bargaining power with ports, with port suppliers, with feeder lines, and with intermodal operators on the landside. Sea-Land also benefits from using its own large capacity vessels and Maersk's new fleet of twelve 6,000 TEU ships which are believed to provide the lowest unit slot costs in the industry.

Evergreen have a crew of only 14 on its ships, compared to crews of 20 on Sea-Land vessels and 23 on P&O (I:16). This, coupled with the fact that its Asian seafarers are paid less than US seafarers, is believed to give the company a competitive advantage, although any advantage will be reducing given Sea-Land's ongoing policy to flag out. Evergreen is highly active in a technical sense as far as ships are concerned, and has developed new twistlocks to help speed up port turnaround, and a new computerised ballast system to allow for faster stability and trim when loading (I:15). In ports, Evergreen guarantees a certain level of throughput in return for low rates and imposes penalties on port operators when they cannot meet agreed productivity or turnaround targets.

Evergreen considers itself "*a lean company*" with minimal office staff in regional headquarters and in its mostly part-owned agency network (I:14). Local offices such as Manchester and Glasgow in the UK each have only 5/6 staff. The company point out that other liner company offices have traditionally been incredibly overmanned, pointing to OOCL which paid off 22 staff from its Manchester office, and Hapag Lloyd which paid off 2,000 staff across Europe.

Moreover, while Sea-Land, P&O and other establishment carriers retain managers for each trade (e.g. Australasia, North America etc.), Evergreen have in each country only two trade managers, one for exports and one for imports and they cover all routes worldwide.

Evergreen's low crew numbers is mainly a consequence of new ship-board management systems whereby a Ship Operating Officer (SOO), is trained to simultaneously keep a continuous lookout, to navigate the ship, and to keep an intelligent watch over all engine room systems. The SOO approach is hardly unique to Evergreen, however, as lines such as Hapag Lloyd now operate such a system with crews of 14/15 on its series of 4,400 TEU ships (Phillips, 1992).

Significant efforts are made by Evergreen to optimise the utilisation of its container fleet in an effort to reduce costs. The carrier claims a container/slot ratio (i.e. the amount of containers in circulation relative to vessel carrying capacity) of generally between 1.9 and 2.5, which is believed to be one of the industry's lowest. An Equipment Department based in the Taipei HQ controls what is one of the largest carrier-owned fleets in the world. A worldwide system of monthly reports are sent to Taipei identifying forecast equipment needs by port and by region and this helps the department plan for future global empty repositioning (Damas, 1994). Evergreen also benefits from purchasing new containers from its own low cost container manufacturing facilities in Taiwan and Indonesia.

Thus, Sea-Land claim to be less fixed cost-based than previously due in the main to its extensive global partnership with Maersk whereby ships, containers and terminals are now shared. Evergreen, however, are beginning to use partnerships more. Both carriers are flagging out to reduce costs but it would appear that Evergreen's crew costs will have been lower than Sea-Land's for some time due to its lower manning and wage levels relative to the US carrier. While Sea-Land and other long established lines have been forced to rationalise and downsize their organisations in recent years, Evergreen claims to have already been a 'lean' company for some time, implying to some extent that other lines have largely been catching up. Sea-Land uses its IT yield management system to reduce costs, and to maximise the net financial benefits of each

container move, while Evergreen's IT focus is on moving empty containers around the system as fast as possible to areas of demand. With apparent benefits to be gained, it might be expected that more lines will in future introduce yield management systems in place of the rather more traditional and less sophisticated liner shipping drive for volume.

6.3.3 Universal needs

"If a product or service meets a universal need and requires little adaptation across national markets, global integration is obviously facilitated."

(Prahalad & Doz, 1987: p.21).

Prahalad & Doz refer to electronic products such as capacitors and resistors as good examples of universal products that do not vary from country to country. Likewise, similar customer needs may enable a service to be standardised around the world with minimum local adaptation. Similar needs and a standardised service may encourage competing businesses to collaborate and share facilities in order to share costs and risks. They may see this as a profitable option. When local adaptation, special prices or differentiated marketing approaches for different customers are required, integration and or collaboration may be expected to be more unusual.

6.3.3.1 Service schedules

On the principal East-West routes, both Sea-Land and Evergreen maintain a minimum frequency of weekly fixed day sailing schedules. On particularly high-volume corridors, however, such as US West Coast to South East Asia, each line maintains three or even four fixed day weekly services. As more lines introduce further service strings on key trade lanes, the norm is becoming three or even four sailings per week on routes such as the Transpacific and Europe-Far East. Typically North-South trades are served less frequently, being weekly or even every two-weeks in some cases.

Transit times are regarded as one of the main selling point on most routes. Evergreen and Maersk are currently bringing into service a large number of fast

25-knot ships and these vessels can cut a day or two off most deep-sea trips. Lines may also quite often change their schedule, by removing a port of call, thereby speeding up port-port transit time on a key corridor (I:23). The inevitable reality though, is that such amendments or enhancements to a line's service schedule are relatively easily copied, and this fast reduces any differentiation advantage gained.

6.3.3.2 Container requirements

The standard ISO container is basically as a global homogenised product. While to a large extent this is true, it rather disguises the fact that the needs of each market can differ with respect to the various *types* of ISO container required. According to Sea-Land, for example, high-cube 9'6" high containers are preferred on the eastbound Pacific trade for light bulky cargoes (e.g. TV's) which are common on that route (I:1). But westbound on the Pacific there is demand for longer 45' containers (the latter also used in US domestic transport) although there are restrictions on the use of such equipment in parts of Asia where road width is limited.

Mid East markets demand different types of unit, including reefers, high-cube, and controlled atmosphere (CA) containers. But return traffic is very limited, and most containers are shipped out empty (I:8). A major benefit for a global carrier is that Asian hubs, where most traffic is generated, are located not too far from the Mid East, so repositioning is less of a burden.

Eastbound from Europe to the Far East is regarded as a 'deadweight' trade, in that the ships can be full in terms of cargo weight before they are full in terms of the number of containers (I:1). This is due to the types of heavy commodity moving eastbound such as machinery, paper, wine and spirits, and tending to favour 20' containers. On the return trip from Asia to Europe, the preference is for 40' units as cargo tends to be light and bulky (e.g. electronics, training shoes). Essentially, demand for specific types of containers in one direction, and for other types on the return leg in a given trade, results in imbalances in the flows of equipment, and this requires a high degree of coordination to manage effectively.

6.3.3.3 Non-containerisable cargo

There are certain cargoes not ideally suited to containers such as automobiles and so-called out-of-gauge objects like buses, tractors, locomotives, yachts, boilers, transformers, and other 'project' consignments. Trade cars tend to be very low margin business, and are shipped in specially built car carriers, essentially multi-deck RoRo ships. RoRo or heavy lift vessels tend to carry very heavy items as the main problem for container ships is that containers cannot be stacked on top of such items, there tends to be a significant loss of container space, container crane booms/spreaders need to be adjusted, and all this takes a considerable time which delays port turnaround (I:6). While Sea-Land do carry some out-of-gauge cargo, Evergreen generally *"turn it all down for operational reasons"* (I:14). To Evergreen, *"repositioning empty containers is considered to be more important than carrying non-containerisable cargo"* (I:14).

6.3.3.4 Overall service

Global carriers tend to have the capability to offer very similar service frequencies and fast transit times as their adversaries on key corridors. This is primarily a function of the type of ship in use, and many carriers will employ vessels either built by the same yard, or fitted with a similar propulsion system. Pressure for faster and more frequent services is coming from shippers, and both Evergreen and Sea-Land appear to have the capability to alter and improve timetables in line with market demands. Service demands from North-South trades are not so intensive as the main East-West routes, although carriers do appear to be striving to improve service offering all round.

Demand for different types of containers varies by market and by trade route and this is the same for all lines. Nevertheless, acknowledging that all deep-sea trades suffer from equipment imbalances, and empty repositioning cannot be avoided, ISO containers of whatever type do, to a large extent, provide what might be considered a universal service with little need for adaptation across national markets for a large proportion of goods. Thus, in terms of universal needs, a high degree of global integration is facilitated, but with the caveat that global carriers still need to slightly vary the 'product' (i.e. the type of container

and service profile) in order to meet different local needs in a number of markets.

6.3.4 Access to raw materials and energy

Access to raw materials and a cheap and plentiful supply of energy can force activities to be located in a specific area. Prahalad & Doz (1987) quote aluminium smelters and paper mills as examples. These operations then have to be integrated with downstream processing activities in other parts of the world.

Shipping services are clearly unlike heavy manufacturing industry, and their need for access to a cheap and plentiful supply of raw materials and energy appears to be less relevant. Given the absence of any raw material needs, energy needs of global shipping lines primarily relate to bunker fuel for ships. However, according to Lim (1994), bunkers account for just 4% of a container line's total operating costs (based on a 4,000 TEU vessel). Cargo expenses, which mainly comprise container costs, terminal handling and inland transport, make up 53% of total operating costs, while ship costs account for 13%, administration expenses 21%, and other expenses 9%. This fits in with Sea-Land's statement that most of a container business's costs are on the landside, not at sea.

Both Sea-Land and Evergreen centralise their respective global bunker fuel purchases. Sea-Land fix bunker supply contracts on a corporate basis together with parent CSX in order to leverage lower prices (I:3). Evergreen too negotiate bunker contracts with global suppliers such as Chevron and Shell (I:16). Bunkers are supplied to both carriers' vessels at the main hub ports such as Rotterdam, Los Angeles and Singapore. Evergreen suggested that lower fuel costs can be obtained at certain ports, in Jeddah for instance, although there has been some doubt concerning the quality of fuel there (I:15). The price of fuel is, however, subject to change and carriers can charge shippers a 'bunker adjustment' surcharge if fuel costs increase above a certain level. The nature of contracting for fuel supplies on a global basis suggests a high degree of global coordination and integration.

Although ‘energy’ costs are important to container lines, clearly the greatest proportion of costs are incurred on landside operations, in administration and in other expenses which, when taken together, account for over 80% of costs, while fuel and ship operating costs combined represent under 20% of total costs. Nevertheless, a line employing older and less fuel efficient ships compared to its competitors may have greater overall fuel consumption and hence may incur higher fuel charges. As Sea-Land has an older fleet profile than Evergreen, this could be an area of some advantage for the latter, even given the small share of fuel costs in terms of total operating costs for container shipping. Continued advances in diesel engine technology leading to reduced fuel consumption per TEU carried will be expected to favour a line regularly building new vessels.

Table 6.2 Global integration differences between Sea-Land and Evergreen		
Sea-Land		Evergreen
<i>Stable, but shortening life cycles for ships</i>	Technology intensity	<i>Stable, but shortening life cycles for ships</i>
<i>Sharing equipment Downsizing</i>	Cost reduction	<i>Efficiency gains through more intensive use of capital assets</i>
<i>Universal containers Route/schedule changes</i>	Universal needs	<i>Universal containers Route/schedule changes Container imbalance focus</i>
<i>Less significant in this industry</i>	Access to raw materials/energy	<i>Less significant in this industry</i>

Table 6.2 summarises key differences identified between Sea-Land and Evergreen with respect to integration of activities. For both carriers, ship and port technology is fairly stable although there is some evidence of shortening life cycles for ships in particular. To reduce costs, Sea-Land concentrates on sharing equipment and downsizing, whereas Evergreen’ focus is on efficiency gains and more intensive use of capital assets. Containers are becoming more universally accepted and lines are able to alter service schedules and begin new services in line with market needs. There is also a need for lines to effectively

manage equipment imbalances, and Evergreen has a strong focus on this aspect of the business. Access to energy requirements appears to be the same for both lines, although this criterion seems to be less significant in a service industry. In summary, most of these industry pressures facing container lines suggest the need for a high degree of global operational integration.

6.4 Pressures for local responsiveness

6.4.1 Differences in customer needs

Businesses which aim to satisfy a diverse set of customer needs, most of which are nation- or region-specific, will face pressures to adopt a locally responsive strategy. This is in contrast to the pressures created by ‘universal’ needs discussed above. If products and services can be adapted to suit local customer requirements, and be marketed profitably, the business may feel little pressure to coordinate and integrate activities with sister companies in other parts of the world. If these conditions are combined with low breakeven points and economies of scale which can be achieved on the basis of locally generated sales volumes, subsidiary companies staffed by local employees who are familiar with local conditions and permitted the independence to set strategy accordingly, may be a more suitable recipe for success.

While “*a box is a box*”, according to one Sea-Land executive (I:9), different customers in different countries will still demand varying levels of service. For example, the level of container shipping service to and from different regions can vary in terms of service frequency, container type, transit time, and reliability.

Shippers of foodstuffs will only accept containers if they are clean, unlike shippers of scrap metal, who care less about the condition of a container, while most perishable products and just-in-time (JIT) cargo require fast transit times, whereas for some low value goods transit time is less important. What is important, according to Sea-Land, is that “*carriers must cater for each shippers specific needs*” (I:19).

Global shippers (and major forwarders) are not all based in the same country - they are worldwide. These big shippers demand lower rates and lines must be able to deal promptly with the needs of each shipper at the local level, at their HQ, or wherever the transport function is controlled. Payment of freight accounts also tends to differ by country; payment may take longer in Europe than in the US, even for the same customer (I:10). In some countries freight is nearly always pre-paid because collection at destination is difficult. Other peculiarities include the need for very high cargo security in certain markets, such as Russia and Brazil (I:19).

Sea-Land treats its global accounts very differently from other customers. A global account is over one year or more and *“takes the customer out of the transaction business into a new consultative relationship”* with Sea-Land (I:11). Sea-Land’s global account managers must *“understand the customers business and provide an adequate response”* (I:24). According to Sea-Land, *“the difference between Sea-Land and Evergreen is that Sea-Land control and manage the customer relationship”* (I:21). By providing value-added services (e.g. through logistics subsidiary Sea-Land Logistics) tailored to suit a particular customer’s needs, Sea-Land is able to provide a customised solution. The company can place personnel inside its customers to assess their needs, if necessary, to identify where value can be added by helping to re-engineer the supply chain. In effect, Sea-Land try to *“make the customer benefit from our knowledge and this enhances their global strategy”*. In carrying out such activities, Sea-Land claims it has a better balance between assets and capabilities than Evergreen (I:19).

Sea-Land view Evergreen as *“a very good carrier”*, but suggests a typical Evergreen customer is a forwarder/consolidator, which makes Evergreen a *“Tier 1”* supplier (I:8). Forwarders are mainly interested in low freight rates, container availability, and a port-port service, according to Sea-Land. Conversely, Sea-Land’s *“competitive advantage is based on the right process, technology, and intellectual capital”*, and this allows every customer’s needs to be addressed through the provision of a fully integrated service (I:21). This means, according to Sea-Land, that they must learn all about a customer in order to define their

total logistics needs. Sea-Land's response to the globalisation of industry is to *"begin to integrate ourselves within their (i.e. the customers) activities and this raises the switching costs"* (I:24). This expertise has allowed the company to manage the global supply chain for major companies such as Ford and GM.

The difference between Sea-land and Evergreen was summed up by one Sea-Land executive, who stated that, *"Evergreen traditionally move boxes.....Sea-Land move more than boxes, Sea-Land provide a total transport service which includes value added services"* (I:25). Driving this strategy is the assumption that not only will each customer's total logistics needs require a different *"tailored"* solution, it is also inevitable that *"each customer's business changes year after year so we (i.e. Sea-Land) need to change with them"* (I:25). This implies a significant degree of local responsiveness with respect to customer needs. Responsiveness in this sense also relates to service changes such as offering a faster transit time between two points, providing a new direct call at a particular port to cater for new traffic flows, or even altering a sailing time or day to meet the needs of a given production facility.

Evergreen argues that it also competes for big traffic flows emanating from global shippers who have sophisticated logistics requirements. Indeed, in early 1998, Evergreen were one of only three carriers nominated by Unilever (the others being P&O Nedlloyd and Hanjin) to carry virtually all of that company's traffic in the East Asia-Pacific Region, with flows amounting to some 15,000 TEU per annum (Eller, 1998). Unilever had initially selected eleven carriers to make presentations and bid for this business, including Sea-Land. The final carrier selection decision was based on a range of criteria including - range of port calls, scheduling, FAK rates, ability to respond quickly to requests for information, plus speed and accuracy of documentation. In reality, both Sea-Land and Evergreen deal with forwarders *and* large global shippers, so there could be somewhat less difference in client base than Sea-Land maintains.

Evergreen point to varying weight of cargo for different trades being a key difference between customers, with heavy cargo outbound from Europe, lighter bulky goods from Asia (I:13). Average weight of a European container is 14 tonnes, a US container 12 tonnes, and an Asian container 10 tonnes and,

according to Evergreen, these differences materially affect the overall container lifting capacity of a ship. To the US the trade is dominated by 40' containers; from the US to Europe there is a mix of 20' and 40'; 40' containers are most common on the Pacific and from Asia to Europe; and from Europe to Asia 20' units are preferred. Clearly, there are considerable variations in demand on all trade routes, and this implies that a carrier has to provide a different level of service in each region.

Approximately 80% of Evergreen cargo is carried in ordinary dry freight containers. The company has few 'special' types of container, but are now moving into the reefer business. Reefer business used to mean a lot of empty repositioning but Evergreen is now carrying a variety of return cargo in temperature controlled units including pharmaceuticals, film, and even Bailey's Irish Cream (I:13).

Evergreen stress the need to have a presence in important markets as without a local office the company claims it would be unlikely to secure very much business (I:13). The Scottish market is a case in point and Evergreen suggested that having an office in Glasgow dealing with sales quotations, cargo reservations, and documentation, provides a level of service deemed essential if it wants to capture a share of the important worldwide Scotch whisky market. Evergreen's strategic alliance with Lloyd Triestino has also helped the carrier make inroads into the "*difficult*" Italian market (I:14). These factors suggest that, for Evergreen, it is also essential to have a locally responsive strategy, although customer considerations for the Taiwanese line may differ slightly from Sea-Land.

In summary, shippers' needs in different countries or markets do tend to vary and all carriers must be aware of these needs. Local representation in key markets/regions appears to be very important for both Sea-Land and Evergreen. Sea-Land has a particular focus in developing global accounts, supply chain re-engineering, and offering added-value services in order to become more integrated within its customers activities. More scepticism of global accounts was evident within Evergreen, although there is evidence to suggest that the Taiwan line can secure large global contracts in competition with other global

carriers. Evergreen's focus is nonetheless more on offering an efficient and competitive shipping service, port-port or door-door, compared to Sea-Land's "*total transportation service*" (I:25).

6.4.2 Differences in distribution channels

Prahalad & Doz refer to differences in distribution channels to mean pricing, product positioning, promotion and advertising. The term 'distribution' to some extent seems inappropriate, or even misleading, as sales issues related to this criterion go much further than mere distribution.

Nevertheless, where sales channels differ from one country to the next, the pressure for local responsiveness will be greater. A locally based and locally managed organisation is much more likely to deliver an appropriate response to these pressures. Attempts to direct these sort of practices from overseas are likely to suffer from lack of understanding and appreciation of local cultures and conditions. Attempts to impose standardised policies from abroad may run into similar problems.

6.4.2.1 Price

As a conference member, Sea-Land must charge the set conference rate for containers moving on a given trade, unlike Evergreen, the latter having the independent flexibility to alter rates as necessary in order to secure traffic. Moreover, conference rates on each trade route differ depending on which direction the container is moving; for example, eastbound from Europe to Asia the rate is almost half what it is westbound, reflecting directional variations in demand and traffic composition. There are also differences in pricing for markets remote from hub ports, with conference rates increased to cover the added costs involved (i.e. in shipping a container from Rotterdam or Felixstowe hubs onwards to regional ports like Grangemouth, Dublin or Oslo). In the US, conference tariffs must be filed with the Federal Maritime Commission, which suggests that control of tariffs is somehow necessary to avoid barriers to trade (Conlon, 1980). There is no such regulation in Europe or in Asia.

6.4.2.2 Place and promotion

Liner operators are forbidden to establish their own agency office in certain countries such as India, China and in the Mid East. This seems to present little difficulty for Evergreen, the line preferring to use agents wherever possible, although the Taiwan carrier tends to take a financial stake in each of its agents, and prefers them not to represent other competing lines in order to avoid any conflict of interest (I:14). In some countries, notably Latin America, distributor laws protect long-term agency agreements to the disadvantage of the principal. A problem highlighted by Sea-Land is that many of the agents in less developed countries have difficulty recruiting skilled people (I:19). Accordingly, where possible, Sea-Land prefer to use own staff in branch offices which do not have to be registered as separate companies and thus avoid having to pay local corporate taxation or comply with local reporting requirements.

6.4.2.3 Product (service)

Shippers in many countries prefer to receive direct calls from mainline vessels rather than use transshipment over ports in neighbouring countries and this is an issue for all carriers (I:6). Thus, Belgian shippers prefer carriers to call at Antwerp rather than having to send goods to Rotterdam; French shippers prefer Le Havre to Antwerp; Canadian shippers prefer Halifax to New York; UK shippers prefer Southampton or Felixstowe rather than Rotterdam; and Malaysian shippers prefer Port Klang to Singapore. These preferences mean lines have to carefully consider their mainport call strategy.

Sea-Land are seeking to use IT more in an effort to control shipments, for pricing, and for promotion of services. But some customers see IT as a threat as they believe lines are using IT to integrate into shippers information systems (I:6). In less developed countries, use of IT may be less dominant and therefore a carriers' approach has to alter accordingly in such markets. Although many larger shippers are in favour of EDI, Sea-Land suggests there is still some apathy amongst many customers.

6.4.2.4 Carrier selection

A key issue facing all carriers concerns the fact that terms of sale differ by trade and sometimes by commodity. This is important because the entity paying the freight generally decides cargo routing and carrier selection. Lines' therefore need to have a presence in local markets, and market their service directly to these decision-makers. For example, according to Sea-Land, the US-India trade is primarily CIF (i.e. price of goods inclusive of "Cost, Insurance and Freight"), which means that the carrier selection decision rests with the seller in the US (I:8). Sea-Land do not accept goods shipped to markets such as India on a collect basis anyway, partly because the company has difficulty getting money out of the country due to strictly enforced exchange controls. The US-Mid East trade is largely FOB ("Free-on-Board", i.e. freight payable at destination), which means carrier selection probably rests with the consignee. It is suggested that national exchange controls make life very difficult for container lines as do currency fluctuations, and that *"where freight is to be paid is a big learning process for bookings staff and represents a huge learning curve"* (I:17).

Evergreen suggests its non-conference pricing flexibility gives it added market power, citing its success in attracting a large increase in market share in 1994 after the conference lines formed the TAA (TransAtlantic Agreement) and increased rates across the board (I:13). Evergreen simply reduced rates just below the new conference level and shippers responded positively.

Whereas Sea-Land primarily use alliances with other carriers to reduce asset requirements, Evergreen claim to use alliances only as a *"stepping stone"* to gain access to difficult markets in which the 'distribution' systems are to a significant degree closed to outsiders, for instance in Italy (I:14). Hence the company's alliance with Lloyd Triestino. The Japanese market is also considered by Evergreen to be difficult to penetrate as shippers there prefer to use Japanese lines. Many shippers and shipping lines in Japan are part of the same trading house and will tend to support each other where possible, making it difficult for outsiders to penetrate the market.

Within each nation or region the customer base can also differ significantly. In Europe, forwarders are prominent, particularly in Germany. Within the UK,

forwarders are prominent in the south of England (I:1) but in Scotland and the north of England, shippers tend to deal direct with lines (I:13), resulting in the need for a different sales approach. In the US, Evergreen negotiates directly with a mix of shippers and forwarders. There are many forwarders involved in the Europe-Far East trade, according to Evergreen, less so on other trades.

Standard freight rate quotations also differ by trade route. For the Europe-Far East trade, Evergreen quote only for door-port container movements because in Asia the consignee arranges and pays for inland transport (I:15). This is also the same for Japan and India, where the terms of carriage are delivered port. Between the US and Europe a door-door quote can be given.

According to Evergreen, many shipping lines still attempt to secure business by entertaining clients to lunches, or even paying their costs to attend major social or sporting events (e.g. golf tournaments, football games etc.). This type of 'promotional' activity is frowned upon by Evergreen, where the emphasis is on being "*a shipping line, not an entertainment company*" (I:14).

Sea-Land point to previous difficulties in markets such as India, where customs support for private warehousing/logistics centre activity was not allowed (O'Mahony, 1990). Things are changing, however, and several global lines, including Sea-Land and APL, now have logistics activities in India.

There is a push towards standardisation of value-added and intermodal service across many countries, but it is difficult to break down some of the barriers. When a trainload of Sea-Land containers full of beer arrived in Kamarova (central Asia) on the Trans-Siberian Railway, the containers were off-loaded and sent to their final destination nearby by road, but the train waited for the empty containers to come back straight away to ensure they did not get lost (Burrows, 1993).

While there is undoubtedly a significant degree of standardisation across national markets in terms of pricing, product/service requirements, promotion and sales channels, it is also certain that many difficulties and peculiarities still persist, and most of these are nation or region specific. This indicates that, for both Sea-Land and Evergreen, as well as for other global lines, there is a continuing need for local responsiveness.

Key differences still exist between Sea-Land and Evergreen, however, in the way each line seeks to overcome sales channel barriers. For example, Sea-Land offer a conference rate, whereas Evergreen need only offer a competitive rate; Sea-Land prefers to have its own offices and employees, Evergreen is content using agencies; and Sea-Land enters into alliances to reduce costs, whilst Evergreen uses partnerships only to gain a foothold in difficult markets. Aside from these differences, all carriers have to consider the different terms of sale prevalent within each market in order to decide who (i.e. shipper or receiver) is responsible for carrier selection in each market (and hence who to target the marketing effort on).

6.4.3 Availability of substitutes and need to adapt

If customer needs in a given national market are being satisfied by locally produced products with differing price-performance relationships, and if the business' own product must be significantly adapted to be locally competitive, then a locally responsive strategy is indicated. This implies that the local culture determines local taste and demand, and that a standardised product/service is not generally acceptable. In recent years, experience in many markets indicates a gradual breakdown of this preference for traditional products, and resistance to standardisation. This implies a declining need to adapt products in order to be competitive in these markets, and a reducing pressure for local responsiveness.

Container shipping is increasingly seen as a commodity service but there are, at least for some cargoes, other alternative ways of transporting goods around the world. Aviation services targeting time-sensitive and higher value cargo are an example of this. For certain kinds of traffic a combined sea-air routing may be advantageous. Other combinations are possible, such as goods being transported between Asia and the US East Coast, which can be shipped on the all-water route direct via the Panama Canal, or via Suez, or alternatively via a US West Coast port then by rail to the East Coast.

Global reach and virtual universal use of the container disguises the fact that certain goods which could be containerised are still transported by other (i.e. substitute) means. This is certainly true for refrigerated cargo, and there still

remains a large fleet of conventional reefer ships, operating on either a dedicated or tramp basis worldwide and carrying a wide range of commodities including meat, bananas (Boyes, 1994) and apples. However, container lines are making inroads into reefer markets and most container ships now offer significant refrigerated container carrying capacity. Sea-Land point out that global partner Maersk's new 6,000 TEU vessels actually have greater reefer capacity (i.e. around 1,000 TEU each) than the largest conventional reefer ships currently in service (I:4).

Sea-Land carry a large volume of automobile components and CKD cars in containers for the major car manufacturers, but relatively few built-up cars as this type of cargo is not really suited to containerisation. The company has made attempts to modify containers for the carriage of cars and this has met with some success, yet by far the majority of trade cars still tend to be shipped by specialised vehicle carrying ships.

A third type of cargo now being carried more and more in containers is liquid bulks. Special tank containers allow container operators to carry a wide variety of commodities such as chemicals, wine and spirits. Dry-bulk cargo is another sector in which container lines are now becoming more involved in. A key problem with many dry-bulk commodities until recently was that their low value precluded them from being shipped on more expensive container liner services. Shippers of commodities such as coffee, sugar or potatoes had to wait until they could put together sufficient cargo for a full shipload and then send the goods by conventional tramp service. According to Sea-Land, as ocean freight rates have reduced, so a great many of these low value bulk cargoes have now come within the reach of the container (I:23).

Thus, both Sea-Land and Evergreen can and do offer all-sea or sea and landbridge options, as do other carriers. Both lines are also targeting refrigerated and other cargo including low value bulk traffic. And each line must also compete against substitute transport services. There are clearly still a number of substitutes to containers for certain goods flows, and this indicates a locally responsive strategy is necessary. Container lines have demonstrated their responsiveness by adapting equipment to suit a larger number of commodities

and this, coupled with lower freight rates, has tended to erode the competitiveness of alternative substitute shipping systems.

6.4.4 Market structure

“Market structure includes the importance of local competitors as compared to multinational ones, as well as the extent of their concentration. If local competitors tend to control a significant portion of the market and/or if the industry is not concentrated, then a locally responsive posture is most usually indicated. A fragmented industry with local competitors indicates that there may be no inherent advantages to size and scale, unless product and process technology can be changed.”

(Prahalad & Doz, 1987: p.21).

Although it has recently been suggested that the commercial container shipping industry structure is dramatically fragmented, despite some operational consolidation among the principal lines (Kadar & De Proost, 1997b), there are clearly differences between the main East-West trades, between North-South trades, and in respect to intra-regional trades. Approximately 80% of traffic on the main East-West trade lanes is controlled by global liner groupings and other lines among the top twenty carriers. Recent industry concentration amongst the leading global carriers is expected to continue, and both Sea-Land and Evergreen forecast fewer mainline carriers in future, not more.

North-South trades such as Latin America, Africa and the Indian Sub Continent are a different proposition. National lines are still heavily involved in some of these trades, and the UNCTAD 40:40:20 agreement, which allows for national line retention of 40% of their country's seaborne trade, is still in existence. However, according to Sea-Land, many national lines do not have the capacity (or the right technology) to carry 40% of their national trade. India is a prime example, and shippers prefer to use reliable international transport companies employing superior tonnage for access to markets like the US and Europe (I:5). Moreover, few developing country national lines offer global coverage, or an advanced service network, and many in fact have failed to have

any impact in what is now a more liberal shipping regime (Iheduru, 1992). Evergreen nevertheless cautions that a strong desire continues to exist among many shippers in certain countries to ship their goods with their own country's national line, and this represents a barrier the global carrier still has to overcome (I:16).

While global carriers are becoming more and more dominant, there are also a number of strong single trade-lane carriers such as ACL and CAST on the Transatlantic route. These 'niche' carriers have been subject to intense financial pressure in recent years, yet have been able to survive and still offer significant capacity to the detriment of global carriers (I:23). Moreover, single trade lines are increasingly entering into combined carrier agreements with carriers serving other trades, and this means their trade lane reach is extended. For instance, ACL now offer through bills of lading for traffic between North America and Mediterranean destinations, with transshipment via Liverpool.

Intra-regional container trades tend to suffer from intense competition, especially in Europe and Asia (I:9). Bankruptcy of European feeder operators Bell Lines and Currie Line in the mid-1990's reflected this intense competition and rate erosion. In both Europe and Asia, there are dozens of small independent short-sea container lines, and with few barriers to entry new entrants frequently establish additional services. However, global carriers are fast penetrating intra-regional trades through the introduction of more direct services employing mainline vessels carrying containers on wayport calls (Ma, 1996; Baird, 1997b). For example, on its Asia-Europe services, Sea-Land are now carrying containers from Mediterranean ports to ports in northern Europe, whilst in Asia, Evergreen are carrying traffic between Japan, Taiwan, and Malaysia, on ships which are primarily geared towards the Transpacific trade.

In the US, coastal trades are protected and reserved for national lines only. This prohibits Evergreen and other foreign-owned carriers from carrying goods between states in the US. Sea-Land are heavily involved in all US 'coastal' trades, of which Puerto Rico, Alaska, and Hawaii are particularly significant. One of the few other countries that still 'protects' its trades by giving national carriers exclusive transport rights (for trade between the home country and the

territory) is France, whose territories include certain islands in the West Indies and Indian Ocean.

Thus, as global carriers become more active in intra-regional trades (with the exception of the US), lines have entered into a very fragmented market in which local competitors control a significant portion of the market. The main East-West trades are rather more concentrated, yet there still remains a significant degree of competition, particularly from other global groupings, but also from niche operators. In respect of North-South trades, a plethora of national and regional lines continue to offer services. Where market structure for each trade differs to such an extent, this will inevitably imply that a locally responsive posture is indicated.

Nevertheless, as Prahalad & Doz (1987) suggest, global operators (through becoming active in all trades) may be able to make the industry structure evolve in their favour. For example, Sea-Land and Evergreen now serve North-South routes in South America and Africa, and Sea-Land/Maersk has recently introduced a new service to Australia and New Zealand. In the longer term, national lines, niche carriers, or intra-regional shortsea operators, will find it harder to compete against the vast scale economy advantages enjoyed by global carriers (Nayar, 1996). The immense bargaining power of these lines, with ports and other suppliers, added to their sophisticated global networks facilitating global contracts with major shippers, could leave the smaller players exposed. Furthermore, the advent of the global corporation rather diminishes any prejudices shippers may once have demonstrated in favour of national lines.

6.4.5 Host government demands

Rules and regulations imposed by national governments may force businesses to adapt their products or systems to be able to compete locally. According to Prahalad & Doz, governments do this for reasons of national economic development and national security. This includes measures such as health and safety regulations, reserving government contracts to local suppliers, and local content rules for foreign investors. Any of these could prevent a business from pursuing a policy of worldwide standardisation and integration.

Global shipping lines must work within literally hundreds of differing national regimes worldwide. Some regimes offer a range of advantages to global companies, others disadvantages. For example, under Danish law, generous tax advantages permit national shipowners to write down the cost of new ships built in that country in only one year (I:10). A high one-off depreciation charge reduces tax exposure and provides an incentive to regularly build new ships. Maersk Line is a particularly notable beneficiary of this policy (and so, indirectly, is Sea-Land). Evergreen managers in the UK believe the Taiwan line also benefits from a similarly advantageous tax regime in relation to capital investment in ships and containers, and this partly explains its continual newbuild programme. It has been difficult to find out more information on these tax advantages, although this is clearly an issue that merits further research. The key point here is that certain competing lines may benefit from national policies that help generate effective competitive advantage over adversaries.

There are many other examples of national policies either enhancing or diminishing carrier competitive advantage. For instance, Sea-Land used to have difficulty shipping cargo between the Greek ports of Piraeus and Thessaloniki as this internal trade was reserved for Greek flag ships only (I:9). However, under an EU ruling, Sea-Land is now permitted to use an EU flagged vessel for such movements, with similar dispensation in other EU countries. In Japan, higher harbour fees are imposed on ships operated by non-Japanese lines, and in the US, US flag vessels incur a lower rate of port dues than foreign-flag ships. In each instance the objective is to give advantage and protection to the national merchant fleet (Nayar, 1996).

A further issue relates to the fact that shipping lines often find it difficult to plan properly in markets where there is a high degree of political instability, such as in certain Latin American countries, or countries of the Former Soviet Union (FSU). According to Sea-Land, many such countries are characterised by excessive bureaucracy, and their level of sophistication varies, particularly in terms of communications, social infrastructure, and crime (I:8; I:19). Many young democracies want to emulate the West, *“but there are always fringe characters who want to turn the clock back”* (e.g. Nicaragua, El Salvador, and

Guatemala), according to Sea-Land. There are generally monetary problems in such countries (e.g. Mexico), and the government is usually underfunded, whilst *“local business communities tend to profit in the good times and disappear in bad”* (I:19). Security issues in these countries do not just relate to goods, they also relate to people, and shipping line staff have themselves been the victims of kidnapping.

Sea-Land’s policy is not to pay off (bribe) officials but it was suggested that the most corrupt governments are to be found in Nigeria, Bangladesh, Pakistan and India (I:23). Further barriers arise *“when you have to factor in the nuances of each trade”* (I:19). For instance, a container arriving at the Indian port of Neva Sheva, then taken by road to Delhi, is only permitted to leave the country by the same route in reverse. Sea-land (and other lines) must also post a bond for each container arriving in India, and containers cannot stay in the country for more than 90 days.

A number of countries also have their *“rule of the day”*; in effect this means a different rule or regulation may be imposed depending more or less on what day of the week it is (I:23). Such rules may comprise a sudden ban on certain commodities, such as imports of scrap. In this situation any containers of scrap already landed would simply be left in the port. It may also lead to containers being discharged at other ports, and being delayed there for some time. In India, the Port Trust’s have the power to confiscate or arrest a container and to levy a fine on the line. It has been known for arrested containers to be out of circulation for up to a couple of years.

In Mid East countries, to comply with local regulations Sea-Land must use a *“trading family”* agency to represent the company. The trading family is also responsible for terminal and trucking activities thus limiting Sea-Land or other lines in what they can do, particularly on the landside. In India, a certificate is required before a company can become an intermodal operator, and it is uncertain whether non-Indian companies are entitled to licenses. In 1991, Sea-Land was prevented from gaining access to Korea’s intermodal market and this prompted the FMC to propose sanctions on Korean-flag vessels calling at US ports. The FMC dropped its proposed fines of \$100,000 per vessel in return for

a dispensation to allow US carriers access to the Korean trucking and rail market. The FMC also argued on behalf of Sea-Land for the latter to be allowed the same access rights in China as the Chinese carrier COSCO is allowed in the US (Knee, 1993).

Evergreen point to increasing involvement of the European Commission (EC) in putting pressure on conference lines serving European ports (I:14). For example, the EC decided that conference lines should not be permitted to jointly set intermodal tariffs, only tariffs for the ocean leg. This was followed by EC fines imposed on TACA member lines for anti-competitive practices.

“In the US there is a lot of red tape”, according to Evergreen (I:16). With tariffs being filed with the authorities, this also means that rates are transparent and Evergreen can gain access to information on all carriers rates to the US; in the US trade *“there is no rate confidentiality”*, according to Evergreen (I:13). Lines found guilty of malpractice (i.e. charging rates below the officially filed tariff rate) can be heavily fined by the FMC. The Far East, in contrast to the US and Europe, is deemed to be relatively free from government interference. However, evidence presented in Chapter 3 suggested that deregulation in the US (through OSRA 98) should reduce this bureaucracy, although Asian countries increasingly appear to be considering introducing new regulations for liner shipping.

Host governments may offer ‘incentives’, such as help with finding premises, tax benefits, and assistance with staff training, to get lines to locate their regional headquarters in a particular port/city. Some port-cities (e.g. Hamburg) treat major shipping lines in a similar way to any other inward investment (e.g. manufacturers), even though the direct employment impact may be less.

One market that has been particularly difficult for Evergreen to gain access to is China. Prior to 1997 China did not allow any direct service between Taiwan and China and Evergreen was forced to tranship all its Chinese cargo over Hong Kong. Now that Hong Kong has reverted to Chinese rule, Evergreen’s subsidiary company Uniglory has surprisingly been permitted to serve China direct from Taiwan.

National governments have also been able to influence manufacturing capacity and hence liner shipping activity through the creation of export processing zones (EPZ's). Multinationals locating within EPZs generally create significant demand for improved liner shipping services, as the maquiladora operations in Mexico confirm (Fawcett, 1990). Governments have also been instrumental in creating free trade zones within or nearby major ports, Dubai's Jebel Ali, for example, thus also influencing liner operators to call at such ports (Boyes, 1993b).

Clearly, different national regulations in each market will affect virtually all global carriers accordingly and, in certain instances, such regulations will inhibit or even prevent full or free access to markets. Moreover, political instability, corruption, and what Sea-Land term the '*nuances*' of each trade also need to be taken into account. In addition to differing host government requirements, supranational bodies, particularly in the EU and the US, demonstrate a growing interest and involvement in liner shipping activity.

The demands imposed by host governments on global shipping lines are clearly many and varied. Although there are signs that the overall extent of these demands may be diminishing, especially in the US, it is evident that global carriers are more or less forced to be locally responsive in numerous national markets in order to comply with a wide variety of differing host government demands.

Table 6.3 summarises key differences between Sea-Land and Evergreen evident from this analysis in terms of local responsiveness. Sea-Land again appear to focus more attention on the specific needs of global shippers, and to providing customers with a tailored service, whilst Evergreen's main orientation is to compete aggressively in the market for all available business. In terms of sales channels, Sea-Land must charge the going conference rate on most trades, and prefers to have its own offices, whereas Evergreen prefers to retain the independence to charge a competitive rate, and is happy to employ agencies as well as its own staff in certain key locations. Both lines compete against the same substitute services and options, and each must recognise global, regional

and local competition in terms of market structure. Finally, carriers' must address different regulations and nuances evident in many host country markets.

Table 6.3 Local responsiveness differences between Sea-Land and Evergreen		
Sea-Land		Evergreen
<i>Focus on global customers and tailored services</i>	Differences in customer needs	<i>Focus on competing aggressively for all business</i>
<i>Conference rate Own office/staff Region/national differences</i>	Differences in sales channels	<i>Competitive rate Agents Region/national differences</i>
<i>Reefer Car carriers Landbridge etc.</i>	Substitutes and need to adapt	<i>Reefer Car carriers Landbridge etc.</i>
<i>Global Regional Local</i>	Market structure	<i>Global Regional Local</i>
<i>Regulatory differences National differences Trade nuances</i>	Host government demands	<i>Regulatory differences National differences Trade nuances</i>

6.5 Summary: Pressures for integration and responsiveness in the global container shipping industry

6.5.1 Evaluation of the framework

The methodological approach adopted has helped to establish, in a structured manner, the main pressures for global integration and for local responsiveness in the container shipping industry. In applying the Prahalad and Doz (1987) integration-responsiveness framework to the industry, it has been possible to establish key pressures faced by lines in different markets, and to identify some of the solutions employed by carriers to help overcome such pressures. The framework has also permitted a degree of comparison between Sea-Land and Evergreen, and has therefore helped in identifying the different strategic approaches adopted by each line as they seek to overcome pressures associated

with global operational management. As Prahalad & Doz claim, the framework permits the researcher to *establish the existing rules of the game* in a given industry.

Notwithstanding these rather more positive aspects relating to the framework, this analysis did raise a number of questions and issues related to its general applicability, in particular:

- ❑ At least one of the framework's criterion headings did not fit very well. For example, during the study 'distribution channels' was taken to really mean 'sales channels', and not 'distribution' in the sense that transport researchers normally associate with the term. This was a little confusing, and the term 'distribution' should probably ideally be changed to 'sales', or some such similar description.
- ❑ Prahalad & Doz had clearly modelled the framework around product rather than service industries. However, they do not distinguish between product or service organisations, and the framework appears to be suited to either. For certain service sectors the criterion 'access to raw materials and energy' will be less relevant, although it does apply to container shipping in respect of ship bunker fuel requirements.
- ❑ In several instances it was evident that factors were interrelated. For instance, similar findings and issues were evident when evaluating differences in customer needs, differences in distribution (sales) channels, and availability of substitutes. Although not necessarily a criticism of the framework, this does tend to result in some duplication within the overall analysis.
- ❑ Analysing pressures for integration and responsiveness raised a wide range of issues, yet the framework did not contain a mechanism for weighting each factor in order of relative importance. In hindsight, any weighting of pressures would be fraught with difficulties. The value of the framework is

perhaps better reflected in the extent of qualitative data collected and analysed in a structured manner. Moreover, although a weighting mechanism could be designed for the framework, this might rather downplay the fact that all pressures need to be taken into account.

Aside from analysis of the framework itself, findings from the interview survey and analysis of competitors in the global container shipping industry raised several issues which require to be highlighted. These are summarised below under the three headings of pressures for global coordination, global integration, and the need for local responsiveness. Although the case study focus was on two industry competitors, Sea-Land and Evergreen, it is argued that the pressures identified must, to a greater or lesser degree, be faced by all competitors in the global container shipping industry.

6.5.2 Pressures for global coordination

Based on this analysis of both carriers, the key pressures imposing a need for global coordination in container shipping are summarised in Table 6.4 below.

The significance of MNC customers of shipping lines is emphasised by restating that 3% of Sea-Land's customers account for over 90% of its business, and that much of this trade consists of inter-company shipments. Sea-Land has responded to this pressure by enhancing its capability for global pricing and this necessitates a high degree of global coordination. Evergreen must compete for the same global shippers business, yet also deals extensively with forwarders in many markets who tend to require a port-port rather than a door-door service.

Lines need to monitor the activities of competitors on a continuous basis globally. Global carriers such as Sea-Land and Evergreen face the same competitors in each market. Competitors in any given trade may be national, regional, or global. Other global carriers are regarded as the main competitors, because of their global scale of activities, their ability to secure large global contracts for lengthy time periods, plus the fact that they control a large market share of traffic carried on the main trades. Combined, these factors suggest significant pressure for global coordination.

Table 6.4 Pressures for global coordination in the container shipping industry
Presence of multinational customers <ul style="list-style-type: none">• examples of MNC's who operate globally and are moving towards single sourcing container transport• increasing emphasis on global pricing• MNC's becoming more important in all trades
Presence of multinational competitors <ul style="list-style-type: none">• top 20 carriers account for over half of capacity worldwide• top 20 carriers account for 80% of containers carried on East-West trades and growing proportion of North-South trade• examples of global competitors and of competitors who only operate on specific regional trades
Investment intensity <ul style="list-style-type: none">• evidence of significant capital costs, particularly for ships, terminals, containers and IT capability• evidence of sharing of costs through global alliances and other forms of partnerships

Global carriers require assets (e.g. ships, terminals, containers etc.) costing at least \$2 billion and this large scale investment must be leveraged across world markets, again demanding a high degree of coordination. However, Sea-Land and Evergreen make different choices with regard to specific assets and resource configuration (the specific issue of strategic choice is discussed in more depth in Chapter 7). For example, Sea-Land has tended to purchase second-hand ships, and use charter ships and leased containers to a greater extent than Evergreen. Sea-Land has also invested in developing an extensive terminal network.

Conversely, Evergreen builds new vessels on a very regular basis, has less involvement in terminal investments, and manufactures its own containers. Sea-Land prefers to share assets in partnership with other carriers, in an effort to reduce costs and risks and help minimise capital investment requirements, whereas Evergreen adopts the opposite approach. Use of IT also differs between these lines with Sea-Land's DYM\$ system seeking to maximise the financial

yield of each container movement, and to enhance ‘value-added’ services, whilst Evergreen’s IT capability is rather more focussed on vessel operations and in maximising equipment utilisation.

6.5.3 Pressures for global integration

The key pressures imposing a need for global integration in container shipping are summarised in Table 6.5 below.

Table 6.5 Pressures for global operational integration in the container shipping industry
Technology intensity <ul style="list-style-type: none">• technology not very intense/complex in this industry although ship lifecycles appear to be shortening• use of few key hub ports in strategic locations facilitates global operational integration of activities• use of sophisticated IT systems becoming more important
Cost reduction <ul style="list-style-type: none">• economies of scale - increasing ship size and terminal throughput• economies of scope - regional offices dealing with multiple trades• efficiency gains through more intensive asset utilisation• asset sharing• flagging out/downsizing
Universal needs <ul style="list-style-type: none">• container is a global homogeneous product (although container type/size differs by trade)• trend towards increased containerisation of world trade• schedules can be altered to take account of changing demand/competitor action• new routes introduced to extend global coverage• need to counteract imbalances in container types and physical flows
Access to raw materials and energy <ul style="list-style-type: none">• raw materials not important in this service industry• fuel requirement arrangements requires more coordination (for purchasing on global basis) than integration

Dependence on a number of geographically dispersed hub ports located in key markets around the world, and shipping service networks linking them, inevitably implies a need for global operational integration, and this will be the case for all global carriers. However, the technology of containerisation cannot be said to be especially complex in that the system is not prone to very rapid change. The technology appears to be mature, both in respect of ships and terminals, and is not subject to rapidly changing product life cycles as is the case in many other industries. Nevertheless, there are indications that the lifecycle of ships may be shortening, as larger and faster vessels come into service pushing existing ships onto routes with lower traffic volumes.

Lines are striving to reduce costs through a variety of measures including - strategic alliances and asset sharing, flags of convenience, plus the drive towards bigger ships/terminals and resulting economies of scale. These developments all result in pressures for integration. Economies of scope obtained by global carriers' through organising each regional office to deal with multiple trades is a benefit not enjoyed by single trade competitors, and demonstrates another pressure for global integration. Repositioning of containers to take account of trade imbalances is also easier for the multi-trade global carrier compared to a single trade line.

Increasing containerisation of world trade emphasises the universal application and nature of the technology, although a variety of container types and sizes are still required to cater for different commodity groups and shipper needs. International trade continues to grow, and with more and more commodities appearing to transfer to containers (e.g. perishable and bulk goods), world container traffic flows are expected to expand further. Nevertheless, the standardised container is to a large extent already a homogeneous global product, and the trend towards increased containerisation of world trade reflects the increasing reach of this mode of transport.

Service schedules can be changed and port calls altered to take account of changing customer demand or in answer to competitor actions. Carriers can also quickly introduce new routes and services or revise existing routes where demand or competitive response warrants this. Global carriers appear to be

regularly introducing new routes/services to extend their global coverage. This corresponds with the notion that global carriers must offer services to all locations where global producers want to do business, and highlights the need for global operational integration.

Raw materials needs clearly do not figure largely in this analysis of what is essentially a service industry. Whilst energy needs in the form of ship bunker fuel are an important consideration, in container shipping this implies a greater degree of coordination in terms of purchasing than in the sense of operational integration, as fuel costs represent a relatively small percentage of total operating costs.

6.5.4 Pressures for local responsiveness

Key pressures imposing a need for local responsiveness in container shipping are summarised in Table 6.6.

Customer needs can differ by trade, and in relation to the specific requirements of local/global shippers. This therefore implies a degree of local responsiveness is necessary, suggesting that for global carriers a local presence is still required in many markets. Sea-Land are heavily involved in tailoring supply chain solutions for each customer, Evergreen less so, and this also necessitates a degree of local responsiveness. Some shippers/commodity groups also have different service needs in terms of transit time, port-port or door-door arrangement, and value added requirements. Global shippers looking for global contracts obviously require a carrier with multiple trade coverage.

Different freight rates apply for each trade, with pricing depending on factors such as conference or non-conference affiliation. Country-specific pressures such as different terms of sales for goods, currency fluctuations, restrictions on carrier operating licences, and the need for tariff filing, places additional demands on lines to be locally responsive in many markets. In addition, some shippers still insist on direct calls at local ports rather than being served by feeder vessel. Other shippers appear to exhibit opposition to EDI links with carriers, and in some markets the use of information technology may be lagging behind, whilst certain markets still demand local carrier representation.

Table 6.6 Pressures for local responsiveness in the container shipping industry
Differences in customer needs <ul style="list-style-type: none"> • different customer groups (e.g. MNC's, forwarders, small shipper, shippers of high/low value products etc.) demanding different levels of service (e.g. global contracts; transit time/reliability; door-door/port-port; value-added services; tailored service; local representation; multiple trade routes)
Differences in distribution (sales) channels <ul style="list-style-type: none"> • rigid conference versus flexible non-conference pricing arrangements • local representation laws • shipper preference for direct call as opposed to feeder • shipper acceptance of EDI • shipper selection of carrier - decision depends on terms of sale which differ by trade route/preference for national line etc.
Availability of substitutes and need to adapt <ul style="list-style-type: none"> • containers penetrating substitute shipping services (e.g. reefer, bulk) • falling freight rates bringing low value cargo into reach of container
Market structure <ul style="list-style-type: none"> • same global competitors in most trades • local competitors in most trades • national lines may benefit from national customer loyalty • intra-regional competition (where global carriers are wayporting) • trades reserved through national legislation (e.g. US coastal trades)
Host government demands <ul style="list-style-type: none"> • many different regimes and legal requirements • market distortions and state aids • political instability, cultural factors, and trade <i>nuances</i> • increasingly important role of large global trading blocs

Substitute products are available for some customers (e.g. reefer ships, car carriers), although container services appear to be targeting and attracting a greater share of such traffic. The lowering of freight rates has also improved the potential for certain low value, transport-cost-sensitive bulk commodities to be containerised, thus moving towards a universal need and away from a distinctly

locally responsive solution. In targeting refrigerated traffic (global carriers have been building new ships with much greater reefer carrying capacity than before, and are now ordering large volumes of reefer containers) global carriers are aiming for a share of the growing worldwide transport of perishable produce.

Ongoing expansion of container traffic also reflects the fact that companies are sourcing products from further afield. This translates into more freight moving over longer distances. Aside from the issue of local responsiveness, these factors (i.e. increased trade, conversion of traffic to containers, and shipments over longer distances) all favour the global carrier offering worldwide transport capability.

The continued presence of national lines and single trade carriers demands a degree of local responsiveness, although the extent of such competition varies by trade. Global carriers increasingly see the same global competitors in all trades and view these carriers as their main competitors. Competition with intra-regional carriers is also fierce as global lines seek to lift more short-haul traffic. A barrier for many global carriers relates to access to certain reserved trades (e.g. the USA), the latter permitted to be served only by national lines.

Carrier subsidies, government trade protection, political instability, and the “*nuances*” of each trade also imply a high degree of local responsiveness is necessary in many markets. Cultural and legal differences further imply a high degree of local knowledge is essential. In addition, increasing pressure is being placed on container shipping lines from the major trading blocs, in particular the US Federal Maritime Commission and the European Commission Competition Directorate, with the main emphasis concerning competition and conference issues.

6.5.5 Implications for global carriers

What are the implications of these findings for a global container shipping business? Clearly, certain elements of strategy, like service capacity, technology, and key global customers, may have to be managed centrally. On the other hand, competitors, landside activities, and other customers may have to be managed both regionally and locally. As Prahalad & Doz suggest, this implies that

managers cannot make a one-time choice on which of the two dimensions to leverage. Managers must therefore simultaneously focus their attention on aspects of the business that require global integration, and aspects that demand local responsiveness, and on varying degrees of strategic coordination. This will inevitably have implications for an organisation's structure, as managerial decision making will need to reflect multiple points of view.

This analysis has also established how and why Sea-Land and Evergreen, each emphasising different modes of operation, make use of available resources in different ways in order to compete in the same global industry. Findings confirm the hypothesis that container lines can indeed provide a global service in different ways, reflecting the different strategic choices they make. Chapter 7 explores this issue further and, linking with this and previous chapters, outlines a theoretical framework which sets out the principal strategic choice options facing competitors in the global container shipping industry.

CHAPTER 7

STRATEGIC CHOICE IN LINER CONTAINER SHIPPING

7.1 Introduction

In this Chapter a new theoretical framework – *strategic choice in the global container shipping industry* – is presented, setting out the principal options facing global container shipping lines in relation to alternative modes of operation (Figure 7.1). The theoretical framework has been developed during the course of this study, building on the industry trends and developments identified in Chapter 3, and following analysis of organisational pressures provided in Chapter 6. The Chapter 5 evaluation of container shipping strategy also aided formulation of categories that are contained within the framework.

This is not a business environment analytical framework. Traditional theories of the business environment seek to analyse the significance of both internal and external environments, and take account of, among other things, factors such as customers, employees, trade unions, culture, investors, government regulations, economic and political conditions, and societal influences (Johnson & Scholes, 1993; Clarke-Hill & Glaister, 1995; Dobson & Starkey, 1994). In other words, they consider environmental influences that *impact* in some way or another on the performance and activities of a business.

The *strategic choice* framework is instead *specific* to the global container shipping business in that it outlines the key strategic options relating to the way a carrier may decide to provide a global service. The choices a carrier makes will inevitably depend, to a large extent, on internal and external environmental influences (e.g. availability of capital, labour etc.), and this will necessitate separate analysis.

The *strategic choice* framework sets out the choices facing competitors under two broad headings - *assets* and *operations*. *Assets* refers to the ‘hardware’ (e.g. ships, containers, terminals etc.) a global carrier must put in place in order to provide a global service, explaining choices relating to the way in which such assets may be configured.

Operations refers to the ‘software’ carriers also need to have in place in order to compete globally. This includes factors such as organisation structure, service

networks, and operating/trade agreements, again outlining the main options in relation to each.

Essentially, the framework implies that there is not one single specific approach, but several alternative ways whereby competitors may provide a global container transportation service. Choices set out in the framework refer to senior management decisions concerning aspects of corporate strategy; hence the title reflects this.

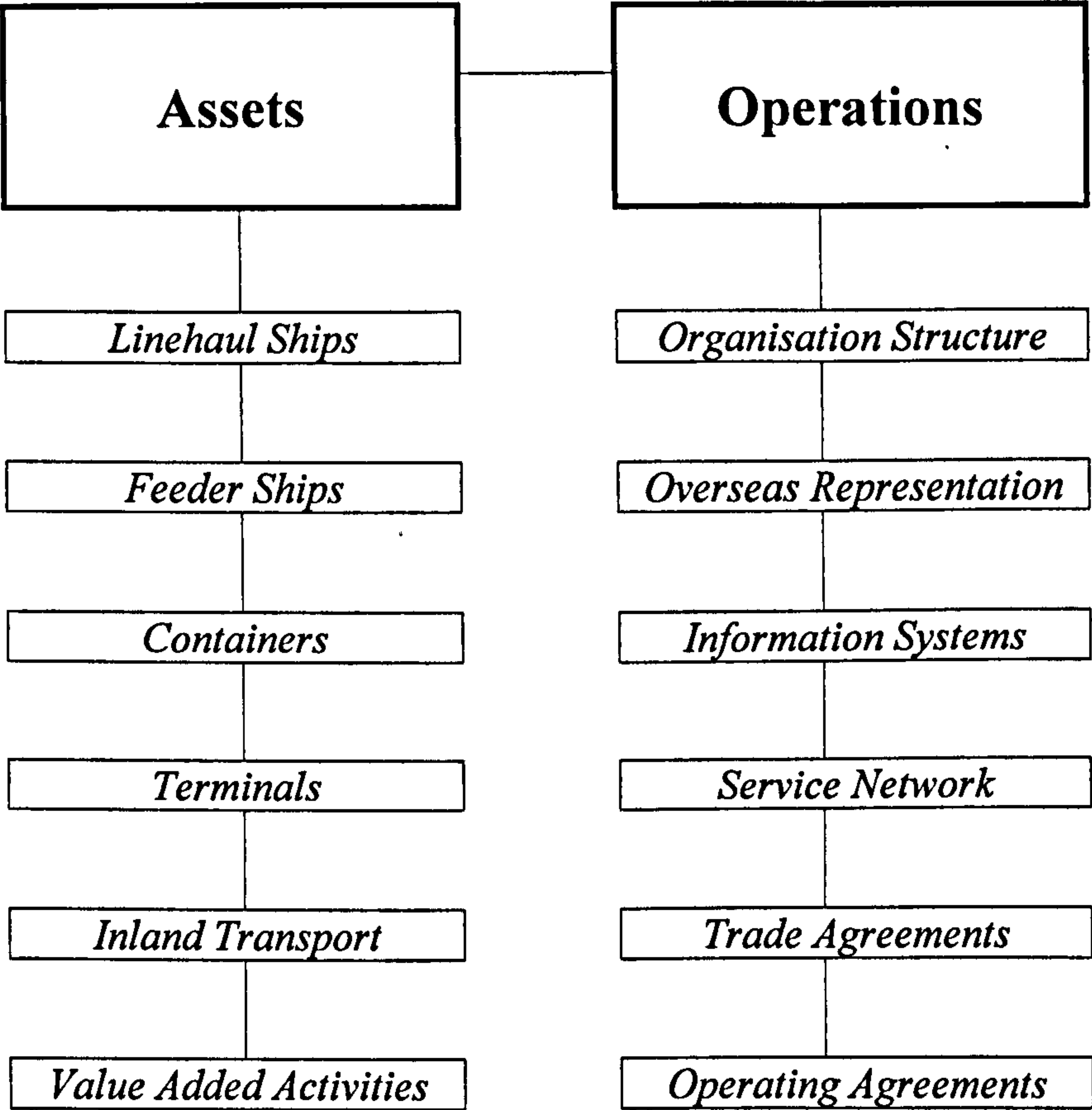


Figure 7.1 Strategic choice in the global container shipping industry

The framework is not an alternative to existing business environment theoretical frameworks firms employ to assist strategy formulation. Rather, its purpose should be seen as more of a complementary nature, to be used in conjunction with other, general business environment analytical frameworks, as an aid to strategic planning. Neither does it suggest which choices are best; it

merely sets out the choices which may be available (assuming sufficient resources), and which are most commonly adopted by industry competitors.

When applied as an analytical tool, it is argued that the framework represents a valid and practical contribution. For instance, the framework can be used:

- To help facilitate comparison and analysis of strategic management in the container shipping industry;
- As an aid in the decision-making processes of global container shipping competitors, and;
- As a mechanism to reduce some of the complexity surrounding the industry, thereby facilitating greater understanding.

In describing the framework, industry examples are provided to illustrate each of the asset and operational choices in practice. Reference is also made in the text to relevant data obtained during interviews with industry executives (in Sea-Land and Evergreen) which is used in order to highlight some of the advantages and disadvantages associated with certain choices. Additional relevant information, based on secondary data sources, is introduced reflecting strategic choices/decisions made by other carriers.

7.2 Assets

The first part of the *strategic choice* framework concerns physical assets necessary to provide a global container service. There are six separate asset groupings listed, and these are linehaul ships, feeder ships, containers, terminals, inland transport, and value added activities. Choices available to carriers under each of these headings are considered in more detail below (see Table 7.1).

Table 7.1 Container shipping assets: Choices for global carriers		
Linehaul Ships	Feeder Ships	Containers
<i>build</i> <i>own</i> <i>lease</i> <i>charter</i> <i>flag out</i> <i>contract management</i> <i>slot sharing</i> <i>second hand</i>	<i>Build</i> <i>own</i> <i>part ownership</i> <i>lease</i> <i>charter</i> <i>flag out</i> <i>contract management</i> <i>common-user</i> <i>Wayporting</i>	<i>build</i> <i>own</i> <i>lease</i> <i>“grey box”</i> <i>shipper-owned</i>
Terminals	Inland Transport	Value Added Activities
<i>Own/part-own</i> <i>build-operate-transfer</i> <i>lease/exclusive use</i> <i>contract out</i> <i>preferential berth</i> <i>common-user</i> <i>inland terminals</i>	<i>Own/part-own</i> <i>lease</i> <i>contract supplier</i> <i>common-user</i>	<i>freight forwarding</i> <i>consolidation</i> <i>warehousing</i> <i>distribution</i> <i>packaging/sorting</i> <i>information</i>

7.2.1 Linehaul ships

Global carriers are faced with several alternative options in regard to provision of linehaul ship requirements. These options include ownership, leasing, chartering, or slot sharing with another line (or lines). Most global shipping lines appear to adopt a mix of these options (I:6). Certain major carriers also own shipyards at which they place most of their orders for newbuildings (e.g. Maersk, Hyundai, and Hanjin). While lines like Evergreen and Maersk prefer to own their linehaul ships (I:14), P&O has a significant proportion of its fleet under a sale and leaseback arrangement with financial institutions.

Most major carriers also charter ships to supplement their owned/leased fleet. Charters can be short, medium or long term. For example, in May 1998 Sea-Land chartered the 2,700 TEU “*Houston*” for six months at a rate of \$14,700 per day, and the 2,058 TEU “*Diman II*” for just one month at a daily rate of \$9,200

(The Commonwealth Group, 1998). Conversely, Korean carrier Cho Yang Line operates Greek owned containerships on long-term four year charters.

Other options in regard to linehaul ship arrangements include flagging out to take advantage of lower labour costs, and/or placing vessels under contract ship management schemes whereby crewing and technical arrangements are left in the hands of third party specialists; in 1995, for instance, Sea-Land contracted out crew management of five vessels to V Ships of Monaco (I:20). It has been argued that the selection of both flagging and ship management are closely interrelated; as flagging out begins to develop, a shipping line's demands for separate ship management increases as the cost-effectiveness of this becomes apparent (Lee, 1996).

A second-hand vessel purchase market also exists, and this enables lines to acquire capacity quickly and usually at low cost. Second-hand ships may be obtained through acquisition by one line of the assets owned by another line, often involving competing companies (e.g. NOL's takeover of APL, P&O's acquisition of Cunard container interests, and Maersk's purchase of East Asiatic Company). Sea-Land's purchase of the containership fleet formerly owned by bankrupted United States Lines provides another example of second-hand ship acquisitions. Sea-Land expect to see further "*cheap assets*" becoming available in future years pending continued market consolidation (I:8).

7.2.2 Feeder ships

The principal options facing global carriers with regard to feeder (or relay) vessels are broadly similar to linehaul ship options - purchase, lease, charter, flagging out and contract management. Generally global carriers will use a mix of these options.

Several carriers build, own and operate a proportion of their own feeder ship fleet, just as they do with deep-sea ships. Most notably, such carriers include Maersk, Evergreen and Hyundai. These built/owned ships will generally be supplemented by chartering in other feeder ships as required (I:14). Another option, which is used by Evergreen, is to take shares in its feeder operation, in Evergreen's case its affiliate company Uniglory. Evergreen receives additional

benefits from its relationship with Uniglory, aside from simply being able to use its ships (I:13). Firstly, smaller ships in the mainline Evergreen fleet are regularly displaced by bigger newbuildings, and these smaller vessels ‘cascade’ directly into Uniglory’s fleet. Secondly, Evergreen also builds and manages Uniglory’s fleet of containers as well as its own, and this generates significant scale economies.

In most trades independent common-user feeder operators contract to carry containers between hubs and relay ports on behalf of deep-sea lines. All global carriers employ common-user feeder services to a lesser or greater extent in different regions of the world (I:9).

Finally, global carriers are increasingly able to avoid higher feeder costs entirely through wayport calls; that is, carrying cargo between ports within a region on their large linehaul vessels. The opportunities for wayporting appear to be increasing as global carriers introduce new services providing more direct calls. In effect, wayporting represents a low cost substitute for feeder services (I:23).

7.2.3 Containers

The principal choices facing global carriers in regard to containers are either to build/own, or lease units. Carriers building their own containers include Maersk, Evergreen and Hyundai. Maersk has a sister company manufacturing containers in Denmark, while Evergreen has its own manufacturing plants in Taiwan and Indonesia (I:16). Most other global carriers, including Sea-Land, acquire their containers from independent container manufacturers. Almost all carriers, however, supplement their owned container fleet with leased units. In the case of Sea-Land, leased containers account for half the carrier’s fleet, whereas with Evergreen and Maersk the leased proportion is typically less than 30%.

A further option increasingly favoured by global carriers is the concept of the ‘grey box’, that is, a neutral container without logos and shared between lines. Within global alliances lines’ are now sharing containers in an effort to cut costs and improve asset utilisation (I:24). A further possibility is the shipper-owned unit, although these are relatively uncommon and tend to comprise the more

expensive ‘special’ containers such as tanks used to carry specific commodities like chemicals.

7.2.4 Terminals

In order to counteract variable service quality in many ports, carriers have sought to control more of their terminal activities through a variety of alternative approaches. Again, most carriers use a mixed approach involving a combination of options, rather than trying to implement one universal policy worldwide.

Global carriers operating terminals with their own staff generally lease facilities from the local port authority concerned (I:7). Port leases tend to be long-term, often between 15-20 years or more, reflecting the nature of the investment. Under a lease agreement, the carrier will pay the port authority a guaranteed minimal annual payment. Port authorities’ generally finance the infrastructure, with the carrier investing in handling equipment and other superstructure such as buildings, gatehouse etc. (I:14), although a mix of options exist (e.g. the port authority may also buy the container cranes, as happens in some US ports). There are also instances where a carrier may take a financial stake in a strategic terminal (e.g. Maersk Sea-Land has a 30% share in the new Malaysian hub Port Tanjung Pelepas - PTP).

A number of global carriers are now actively participating as partners in consortia bidding to build and/or operate new terminals. Carriers involved in the bidding to build and operate a new container terminal in Thailand, for instance, include P&O, NYK and Mitsui OSK Line. Other BOT container terminal schemes involving global carriers are taking place at a number of ports throughout Asia, Latin America, and Europe. Sea-Land successfully tendered in partnership with local firms to build and operate a new container terminal in Aden (I:23).

Once the terminal arrangement is in place, a carrier may choose to contract out terminal operations by appointing a local stevedore to operate its terminal. At a number of US ports, although carriers lease their own dedicated terminals, often local stevedoring companies are employed to operate them (I:14). In some cases

the stevedoring company may be partially or wholly-owned by the line leasing the terminal.

There has recently been some terminal rationalisation due to the formation of global alliances between carriers. Rather than each line having its own terminal in a given port, as in the past, a degree of terminal sharing is now possible and this has helped to reduce costs and maximise utilisation. Sea-Land and Maersk provide an example of this; in Algeciras the two lines simply tore down the fence separating their respective terminals in order to make one large terminal. Similar Sea-Land/Maersk terminal rationalisation has taken place in Kaohsiung and Yokohama (I:20).

Many global carriers still also make use of common-user terminals around the world. Ports such as Felixstowe, Singapore, and Hamburg each offer only common-user facilities where larger carriers will generally negotiate a priority berthing agreement so that ships do not have to wait for a berth (Baird, 1996; Charlier, 1996). However, there is increasing pressure on these ports to provide terminals dedicated to each global alliance (I:21). Other researchers have noted that carriers, through alliances and mergers generating substantial volumes, are gaining greater control over ports (Meersman, Moglia & Van de Voorde, 1999). In this regard, port authorities are now facing much larger players, and this has altered the balance of power in favour of carriers.

Carriers may also establish inland terminals distant from ports which can be used to store empty containers and to accept full containers for on-carriage to seaports. Often these inland terminals will have customs clearance facilities, allowing goods to be cleared prior to arrival at or after departure from the port. Sea-Land operate a number of inland terminals in the USA and in Russia; P&O operates a network of 'containerbases' in the UK; and Evergreen has similar inland facilities in Taiwan and in China. Very often these inland terminals will have direct rail connections with ports.

Global carriers therefore tend to have a mix of terminal arrangements in place and very often the mix will be dependent to some extent upon local regulations concerning the activities of foreign-owned enterprises. What Sea-Land and other global carriers seek to do, wherever possible, however, is to retain the utmost

control over their main hub terminals (I:16; I:23). Within Sea-Land, the company's global terminal portfolio is widely regarded as one of its key strengths (I:19). The logic of this philosophy dates back to the early days in the company's development when its founder, Malcolm McLean, argued strongly that control of terminals was crucial in facilitating access to markets.

7.2.5 Inland transport

Inland transport of containers mainly involves transport by road, rail, or waterway. However, virtually all containers will be delivered to the final destination by road, even in instances where rail or barge transport is employed between the port and an inland terminal. Thus, the importance of trucking services cannot be over-emphasised. Indeed, as noted earlier in this thesis, the significance of trucking services is a further reflection of the fact that most of a global carrier's costs are incurred on the landside.

Global carriers again tend to adopt a mix of approaches towards inland transport operations. These range from outright ownership of subsidiary companies, to contracting out inland transport to third party service providers. Sea-Land, for example, employ the trucking services of sister company CSX Intermodal in North America, although a significant volume of containers are also moved to and from ports in the US by independent trucking firms (I:19). Whilst Sea-Land has built up its own trucking interests in Hong Kong and China, in most other markets the carrier contracts out road transport to third parties. In the UK market, both Sea-Land and Evergreen have exclusive road haulage arrangements with one trucking supplier (I:4; I:15).

With regard to rail transport, few global carriers actually own rolling stock, an exception being another Sea-Land sister company CSX Rail. Of all global carriers, Sea-Land appears to be one of the most pro-active in rail transport, with extensive services in North America, expanding services in Russia, China, and in Northern Europe, and the possibility of new services in India and Latin America (I:25). The rather fragmented nature of Europe's rail system has until now inhibited Sea-Land from expanding its services there, however, the carrier now jointly operates block train services from Rotterdam to several inland

destinations in partnership with other global carriers Maersk and P&O-Nedlloyd, in conjunction with Dutch Railways (I:21).

Relatively few global carriers operate their own container barge services, although a P&O subsidiary does provides barge services for containers on the Rhine. Otherwise, global carriers employ independent barge operators wherever inland waterway transit is preferred to rail or road.

7.2.6 Value added activities

Freight forwarding, consolidation, warehousing, distribution, labelling and packaging are typical of the value added services global carriers may decide to offer customers. Value added services can also include managing component flows, matching subcomponents, and even certain assembly functions. Other activities include provision of specialised services for goods such as clothing, refrigerated, and hazardous products. Often these and other logistics services will be provided through a carrier's subsidiary company, for example, Sea-Land's affiliate Sea-Land Logistics (formerly Buyers Consolidated). P&O-Nedlloyd, Maersk Line, and Hanjin also have subsidiary companies offering value added services.

According to Graham (1998), providing value added services offers carriers the opportunity to become more competitive through product differentiation. Scope for differentiation is lowest in the basic port-port services, argues Graham, and highest in value added services. However, as more carriers become logistics service providers, scope for differentiation may be expected to reduce (I:19). Moreover, Evergreen argue that the majority of shippers do not need to purchase value added services from liner operators (I:13).

Yet according to Sea-Land, *“offering value added services enable us to get beyond price”* (I:24). The company believes that the relationship between carrier and shipper has shifted and the shipper now looks at total logistics costs, as opposed to simply the traditional port-port or door-door movement. In answer to this, the *“new”* role of Sea-Land is: *“to consider the total transport chain of its customers and to take costs out of the total logistics system”* (I:21).

A global carrier could simply continue to offer a “*basic transport service*”, or what Sea-Land terms a customers “*Bill of Rights*”, which consists simply of shipping goods, processing documentation, ensuring equipment availability, and service reliability at an agreed price (I:19). Sea-Land’s goal, however, is to get beyond the basic transport service and “*to provide so much value that will attract customers to use (Sea-Land) at a premium rate*” (I:21). For example, through investments in information technology, it is possible for a global carrier to feed back information on shipments to manufacturers, and this can bring about alterations in distribution and stockholding patterns: “*clothing fashions changing over time, for instance, and this has implications for consolidations*” (I:22). Track and trace is another area Sea-Land is currently working on.

Through logistics affiliates, carriers are therefore seeking to tailor services to suit customer needs. A key motivation for this, suggests Sea-Land, is that “*the more sophisticated customers pay more money, and these are the companies that are expanding their activities globally*” (I:24). These companies, suggest Sea-Land, look for total cost benefits and to outsource activities. Essentially, by providing value added services, a global carrier starts to provide “*a total transport service*”, and this is becoming more important as most trade is inter-company, which means that the buyer is the same firm as the seller (I:24).

Other activities in supply chain engineering, such as placing an employee inside a customer for a period to assess their logistics needs, is what Sea-Land consider to be “*providing an integrated service*” (I:21). By developing a number of these strategic accounts that deal on a long-term basis, the global carrier seeks to enter into a “*long-term partnership*” with the customer (I:21). The carrier then becomes more integrated within its customers activities and this raises switching costs. This comprises Sea-Land’s response to what it sees as the new market demands, and enables a global carrier to become a “*Tier 3*” supplier (I:17). With one or two exceptions (e.g. Evergreen), most global carriers now appear to be offering shippers a range of these and other value-added services.

7.3 Operations

The second component part of the *strategic choice* theoretical framework refers to business operations in container shipping. That is, the key operational choices and subsequent decisions that must be taken by a line seeking to maintain a global container service.

Operational choices are considered under the six headings of organisation structure, overseas representation, information systems, service network, trade agreements, and operating agreements. The principal options relating to each of these operational aspects are summarised in Table 7.2, and described further below.

Table 7.2 Container shipping operations: Choices for global carriers		
Organisation Structure	Overseas Representation	Information Systems
<i>centralised</i> <i>decentralised</i> <i>divisions/matrix</i> <i>personnel policy</i>	<i>own sales offices</i> <i>independent agents</i> <i>part-owned agents</i>	<i>in-house systems</i> <i>off-the-shelf systems</i> <i>global networks</i> <i>IT links with shippers/ports</i> <i>value added equipment/revenue focus</i>
Service Network	Trade Agreements	Operating Agreements
<i>end-to-end</i> <i>pendulum</i> <i>round-the-world</i> <i>hub & spoke</i> <i>wayport calls</i>	<i>conference member</i> <i>rate agreements</i> <i>stabilisation agreements</i> <i>partial membership</i> <i>independent</i>	<i>slot exchange</i> <i>slot charter</i> <i>consortia/pooling</i> <i>global alliance</i>

7.3.1 Organisation structure

The way in which a global carrier structures its organisation broadly means whether to take a centralised or a decentralised approach within a

divisionalised/matrix structure. Sea-Land, for example, has centralised activities by relocating its three main trade divisions - Atlantic, Pacific and Americas - within the Charlotte, North Carolina head office. Each trade division is headed by a Vice President, a General Manager, and a Sales Manager. Finance, Marine, Equipment, Global Sales and Marketing divisions are also headquartered in Charlotte. Sea-Land's regional offices now primarily coordinate local business activities (I:24). Traditional liner companies such as P&O tend to take a similar 'trade' perspective, appointing management teams to coordinate activities on each specific trade route (e.g. North Atlantic, Far East, Australasia etc.).

Conversely, Evergreen has adopted an altogether different approach by delegating responsibility for regional sales and pricing to each regional head office located in the USA (New York), Europe (Hamburg), Japan (Tokyo) and Asia (Taipei) respectively. This means that each regional head office has responsibility for pricing all outbound cargo from that region to anywhere in the world (I:15). The Taipei global head office nevertheless retains control over ships, equipment, and worldwide marketing. This suggests a somewhat more decentralised organisation than Sea-Land, yet still basically within a matrix structure.

A typical regional division, whether centralised or decentralised, will tend to have a wide geographic area to consider. Sea-Land's Americas Division, for example, is responsible for trade with 23 countries and also deals with traffic between Europe/Asia and Latin America (I:19). The division is responsible for strategy and pricing, which is relatively easily coordinated together with other functions given that these are all now located together in the Charlotte head office.

However, Sea-Land believes it is not a centralised organisation as such, rather "*it is now an integrated carrier*" (I:21). Dealing more and more with global customers meant the old model of locating separate trade divisions in different regions of the world was becoming a constraint, and Sea-Land is now building on its strengths by locating both marketing and operations expertise within the one global head office. Sea-Land reasons that "*because there is a time lag in being responsive to customers, a single integrated network now helps*" (I:24).

Sea-Land nevertheless recognise there is still a need to have a local presence in many world markets, and that the needs of emerging markets differ from mainstream markets in North America or in Europe. Somewhat paradoxically, the carrier suggested the presence of customer differences even within the same national market. For example, as one Sea-Land manager noted in regard to shipper needs, tariffs, container types and so on: *“the local market in New Orleans differs from the Los Angeles market”* (I:23). Consequently, local expertise is still required, and carriers need to have trade division personnel who know every market well.

A line will have a number of choices with regard to personnel policy. Although most senior staff in Sea-Land's Charlotte HQ are US nationals, there is a trend towards recruiting people of different nationalities (and expertise) from branch offices across the world to locate in Charlotte. This form of approach significantly widens the knowledge base of the global HQ (I:18). Local branch offices tend to be staffed, in the main, by local nationals, particularly in more developed markets such as Europe and North America.

Evergreen adopts a quite different personnel policy to that of Sea-Land. The company has a US management structure, with deputy vice presidents, vice presidents, senior vice presidents, presidents etc. But, according to one Evergreen employee, *“no non-Taiwanese national could ever get above senior vice president”* (I:13). Evergreen recruits hundreds of graduates in Taiwan each year as management trainees. These management trainees are then posted for two years to an overseas branch office. There they are *“groomed for senior positions”* within the company (I:14). Danish carrier Maersk Line adopts a similar approach, first giving (mostly Danish) trainees its customised Maersk International Shipping Education (MISE), followed by expatriation for 24 months. Posting overseas is designed to allow the trainee to learn the local language and become familiar with the culture and habits of the country.

According to one Evergreen employee, a consequence of this policy is that *“the company has been accused of being too heavy with home nationals and this has led to complaints from some customers in the US”* (I:15). An example is Evergreen's New York office where, out of a total of 300 staff, 200 are Taiwan

nationals. The London and Hamburg offices are also predominantly staffed by Taiwan nationals. The company is described by insiders as not being easy to work for *“as the oriental style of management can be very strict, takes a lot of getting used to, and saving face is crucial to them”* (I:13). Staff in the US and Europe are encouraged to learn Mandarin and *“meetings can be frustrating as Taiwan staff will often talk among themselves in Mandarin”* (I:13).

For many global carriers, personnel policy seems to mainly comprise recruitment and training home country nationals, followed by positioning of these employees around the world as local managers. Establishing the rationale behind such a policy is an aspect of the business that could merit further research.

7.3.2 Overseas representation

Principal options relating to the way a global carrier maintains overseas representation includes either establishing wholly-owned subsidiary branch sales offices, forming part-owned agencies with local companies, or appointing independent agents to act on its behalf. In general, a global carrier will seek to establish its own offices at each of the major hub ports where linehaul vessels call. However, differing national and regional laws can restrict the use of wholly-owned subsidiary offices, which means that in some cases a mix of agent representation will be necessary (I:23).

Evergreen Line normally establishes overseas agencies in joint ownership with a local partner, with Evergreen stipulating that the agent only works for the one line (i.e. Evergreen) (I:13). In key markets such as the US, Germany and the UK, Evergreen has subsequently acquired outright control of its agents. Once a year, all Evergreen agents are invited to Taipei to hear the annual message from the chairman, and to discuss strategic issues. This event is known as the *“General Agent Talks”* (I:13).

Sea-Land prefers to set up its own local Sea-Land offices rather than employ independent representatives. Latin America was previously entirely agency territory but Sea-Land has now established its own companies in the region supported by fewer agencies. According to Sea-Land, *“an agent has an agent*

agenda, not a Sea-Land agenda”, and this can be costly for a line in the long term (I:19). Sea-Land regrets not being allowed to have its own agency office in countries where the law prevents this, such as in the Mid East, where a locally owned company is necessary, or in India and China where a local partner is essential (I:23).

7.3.3 Information systems

Information technology (IT) can be used to link offices to each other, to connect with customers and suppliers, and to provide the capability to further optimise asset utilisation (e.g. yield management, minimise container imbalances etc.). Information systems could have been considered under assets in the framework, however, in the context of the global container shipping industry, it was considered more appropriate to assess ways in which information systems are used to enhance operational capabilities through transfer of information.

Nowadays it is possible to have a line management system which links together globally dispersed operations, using either off-the-shelf software, or mainframe linked systems created in-house (I:22). Current basic systems comprise a cargo manifest database, freight bookings, tariff, pricing and all other commercial data; a container database with all container history records; and a financial database, with all revenue and expenses.

Aside from systems providing basic office functions, Evergreen Line employs a sophisticated computer system to track the levels of surplus container equipment via its four regional offices in Hamburg, New York, Tokyo and Taipei, in an effort to ascertain future requirements by location. This worldwide reporting system enables Evergreen’s equipment department to forecast equipment needs by port and region, helping direct the flow of empty containers to areas of demand (I:16).

Sea-Land’s DYM\$ (Dynamic Yield Management) system goes a little deeper than this, actually telling the carrier what specific commodities and traffic origin/destination to target in order to “*put the best paying cargo on its ships*” (I:18). To begin with, the DYM\$ system costs out thousands of possible container routes between all available origins and destinations. Variable (but not

fixed) costs are calculated for empty and for loaded units. The system also considers vessel capacity and other constraints, such as the number of containers in circulation. With this system, Sea-Land is able to calculate the “*opportunity cost*” of a container movement as DYM\$ can calculate the net benefit of each and every shipment, thereby permitting easy comparison (I:22). The system can also help sales guidelines and improve repositioning by allowing cargo to be ranked; some cargo may in fact be suboptimal (i.e. not worth carrying) and the system permits Sea-Land to improve the cargo mix above this level (I:18).

While airlines have the flexibility to vary rates using yield management systems, there is no such flexibility (yet) in shipping. DYM\$ (a Sun Workstation system) nevertheless represents a significant change of thinking in the sense that a line can now move away from the traditional approach and mistaken belief that “*filling slots at any cost*” was the only option (I:24). It demonstrates that, in certain cases, a ship can actually be productive with lots of empty containers on board. However, one problem with DYM\$ is that “*business cannot be turned on at will*” (I:20). The system may inform more precisely what pays well, and what pays not so well, but so long as competition between carriers remains fierce, often the final decision on who gets the cargo will still depend to a large degree on price.

IT is nevertheless regarded as an important competence within Sea-Land. The company has appointed a Director of Technology, based in Charlotte, and also has a field director within each trade division responsible for local implementation and integration of IT systems. There is a feeling that shippers contact with lines should have been paperless by now, but that this will happen soon as bookings are already being made via the Internet via carrier websites. Sea-Land’s view is that “*the business is about moving information and cargo simultaneously*” (I:21). A common language is being developed (e.g. a booking is a “transaction 22”) and further automation is planned (I:23).

Information systems may also enhance communication between lines working in strategic alliances (I:5). Global carriers are now using the OCEAN system in North America, which is a technical collaboration between lines that also permits importers and exporters to exchange information with them. The

equivalent system in Europe is EDISHIP, with most major shipping lines already committed to it.

Global carriers are also forming EDI links with port and other suppliers. For example, Felixstowe's FSCP system can provide lines with real time information regarding bayplans and container inventory, cargo clearance, and links with forwarders and inland transport providers (I:12). Other ports offer similar EDI systems designed primarily to speed up the transfer of containers through the terminals. While port EDI systems have tended to be directly used by, and are specific to, local customers (e.g. lines, forwarders, hauliers etc.), hub ports worldwide are also developing direct connections between them to facilitate the transfer of information relating to ship arrivals, departures, cargo etc. (I:7). In addition to the above, information systems can also be used to enhance a global carriers value added capability (e.g. storage, distribution etc.), as noted in section 7.2.6 above.

7.3.4 Service network

Global carriers have three main options concerning the way they configure their deep-sea liner service networks. These options are end-to-end services, pendulum services, or round-the-world (rtw) services (Lim, 1996). Global carriers will generally employ a mix of two or more of these service options in order to ensure adequate coverage of the principal East-West routes.

In a Transpacific end-to-end service, vessels steaming from Asia to the US then return to Asia. Similarly, on the Transatlantic trade, end-to-end vessels steaming from the US to Europe will then return across the Atlantic to the US, and so on.

A pendulum service is where the service is extended to take in ports on another trade lane. An example of a pendulum service is Maersk's Transatlantic service operating between Europe and the US, with ships then proceeding through the Panama Canal to the US west coast, and across the Pacific to the Far East before returning to Europe via the same route (i.e. the US and Panama). There appears to be significant fleet savings possible from operating a pendulum service. For example, Maersk's Europe-US-Far East pendulum service only

requires nine vessels to maintain a weekly sailing frequency, whereas maintaining two separate Atlantic and Pacific services would require a total of twelve ships (I:20).

Round-the-world (rtw) services generally involve committing two separate fleets of ships, with one fleet circumnavigates the globe in a westbound direction, the other eastbound. Ports need not be exactly mirrored in each direction as ship capacity and sailing frequency is geared to the volume of traffic on each leg, which differs due to trade imbalances. The rtw concept essentially acts much like *“a hoover, with ships functioning like vacuum cleaners calling at hub ports, sucking in very large quantities of containers”* (I:23). A major advantage of both rtw and pendulum service options is that they offer carriers the opportunity to reposition empty containers quickly to areas of demand in a way that is not always possible for end-to-end regional operators.

Irrespective of which option(s) carriers select, this will still mean a hub and spoke network is being employed, and there will be a need for some traffic to be transhipped and fed between hubs and remote locations. Another option, or alternative, to hub and spoke to some extent (especially in Asia), is to offer wayport calls within intra-regional trades using mainline vessels in an effort to avoid high feeder costs. However, as ships get bigger the current multiport itineraries could lose out as carriers introduce more dedicated deep-sea hub-to-hub shuttle services and connecting feeder links.

7.3.5 Trade agreements

Choices open to global carriers in respect of trade agreements principally relate to whether to become a member of the relevant liner conference (or rate and stabilisation agreement) for each trade, or to operate outside of such agreements as an ‘independent’ carrier. So-called ‘establishment’ lines such as P&O-Nedlloyd, Hapag Lloyd, Maersk, Sea-Land and NYK have tended to operate within the conference system, while independents, most notably Evergreen, COSCO, and DSR Senator Line, have preferred to remain outwith the conference system.

Separate agreements covering rates and capacity now exist on the Europe-Asia and Transpacific trades. While conference lines have tended to join both rates and capacity agreements, independent lines have generally opted to join only capacity management programmes, which set capacity ceilings on a given trade, and to remain outside of rate agreements (I:23).

On the Transatlantic trade, the Transatlantic Conference Agreement (TACA) controls both rates and capacity. Evergreen Line has no involvement with TACA, disagreeing with its rate setting function (I:13). However, certain other independent lines have what is known as ‘partial membership’ of TACA, which means their customer files and operations are only policed to a certain extent by the TACA Secretariat.

Conference affiliation is becoming more cumbersome to deal with, according to Sea-Land (I:23). This is partly due to shipper pressure, and global customers in particular, who want global contracts (I:24). As each conference is still only concerned with one trade lane, this means a conference line must comply with a particular set of freight rates on each trade, and this will tend to make negotiating a global contract more complicated than it would otherwise be.

A carrier’s choice of strategy in relation to trade agreements will often signal its general pricing policy. For example, lines signing up to rate agreements are obliged to charge accordingly (although members may still take ‘independent action’ on rates when this is considered necessary), whereas independent lines have the freedom to undercut conference rates should they so wish. Whether lines actually have the power to set rates is ultimately a moot point, given the increasing bargaining power of global shippers (I:15).

7.3.6 Operating agreements

The main choices facing global carriers with respect to operating agreements with other lines range from simple slot exchanges, to consortia and ship pooling arrangements, through to full scale global alliances.

Slot exchange agreements, also known as space sharing, refers to the allocation of a certain number of ship-board container slots by one company to another. Such slot chartering need not necessarily be reciprocal.

In the early days of containerisation, consortia (i.e. joint service) or pooling arrangements were the preferred mechanism whereby lines were able to participate in what is a very a capital intensive business without having to invest excessive amounts individually (Heaver, 1994). Although consortia lines pooled their ships to provide joint services on particular trade routes, individual members retained responsibility for their own sales and marketing. During recent years, such consortia have begun to disintegrate (e.g. Trio, Scandutch), with some partners seeking new arrangements, and others leaving the industry entirely. Some consortia arrangements ended when partner shareholdings/assets were bought by remaining members of the group (e.g. OCL, ACL).

Global alliances are considered to be the successor to the old style consortia (Ma, 1996). A global alliance will tend to differ from previous consortia arrangement in two principal ways. First, a global alliance will encompass activities on all major East-West trade lanes, and perhaps some North-South trades as well. Second, in a global alliance member lines will tend to share more than just ships. For example, carriers may also share terminals, feeder services, containers, and there may be joint arrangements for inland transport. Services will, however, continue to be marketed separately by each partner.

It may be practical for a global carrier to employ a mix of operating arrangements covering a number of trades (I:14). For example, Evergreen operates its rtw service independently of any other line, but the Taiwan carrier has a reciprocal slot sharing arrangement with Lykes Lines on the Transatlantic leg only; this permits both carriers to offer a twice weekly Transatlantic service. Evergreen also charters slots from Italia Line on the latter's US-Mediterranean service. In addition, Evergreen operates a joint pendulum service between the Mediterranean-Asia-US with another Italian shipping company, Lloyd Triestino (the latter now owned by Evergreen).

7.4 Summary

Analysing and understanding any complex industry will inevitably be difficult. The theoretical framework proposed in this chapter helps to reduce that complexity in the context of the global container shipping industry. The framework can be used as a strategic management tool in helping to assess organisational competencies and employment of resources. As an applied rather than a general theoretical framework, it is industry-specific, and explains the different ways in which competitors can elect to compete in the global container shipping business.

There is a clear relationship between the two main components of the theory - *assets* and *operations*. For example, the requirement for assets such as ships, containers, and terminals, will be influenced by the form of trade and operating agreements entered into, as well as the preferred type of service networks employed. Moreover, value added activities will be likely to be influenced by the information technology capabilities of a line, and its affiliates.

It is evident that global carriers may exhibit quite different emphases in regard to certain assets, and specifically towards the methods of procurement and employment of these assets. Sea-Land, for example, appears to be increasingly moving out of owning assets such as ships and containers, and into landside activities, especially terminals, inland transport and value added activities, reflecting a more intermodal orientation. Evergreen, on the other hand, concentrates on building ships and containers, with rather less interest in terminals and other landside activities, reflecting a strong maritime orientation.

These two carriers also adopt a very different posture as far as key operational issues are concerned. For instance, key strategy differences include:

- ❑ Centralised (or integrated) as opposed to decentralised organisation structures;
- ❑ Owned offices as opposed to using agents;

- ❑ Using information systems to maximise net revenue, as opposed to maximising equipment utilisation;
- ❑ Offering round-the-world, plus pendulum, rather than end-to-end plus pendulum networks;
- ❑ Conference or non-conference affiliation, and;
- ❑ Global alliance as opposed to less elaborate single trade slot sharing arrangements.

Essentially, the framework sets out key asset and operational choices global carriers must make in deciding on a preferred strategy. A key question, however, relates to the practical and theoretical usefulness of the framework. In this sense it can be argued that the framework may be used in a number of ways, for example:

- ❑ In assessing whether a firm has the resources necessary to support its preferred strategy, and to alter the strategy to fit in with available resources;
- ❑ In establishing if a firm is employing its resources in an optimal manner (e.g. by comparing other options with the current choice);
- ❑ In helping to benchmark a firm's performance by comparing its choices against that of competitors;
- ❑ As a stepping stone towards identification of key strategic competencies and capabilities;
- ❑ To aid decision making and strategic planning: and

- As a teaching tool to help explain (to employees, students etc.) the principal ways in which firms compete in the global container shipping business.

It was stated in the introduction to this chapter that the framework is not a substitute for any business environment theoretical framework. Rather, it should be applied together with other analytical tools to provide for a more comprehensive analysis and evaluation of strategy, and therefore as an aid to the corporate decision-making and strategic planning process.

While decisions relating to choices outlined in the framework may often reflect, rather than determine a company's strategy, there are clearly going to be other environmental influences (e.g. the availability and cost of capital, skilled labour, regulations etc.), that will effect the position of a company in the global marketplace. In this sense, the assets will tend to follow, not lead the strategy. Ultimately, however, the nature of the asset base is likely to be compatible with the dominant corporate philosophy, whether that be intermodal, maritime, or any other orientation.

CHAPTER 8

CONCLUSIONS

8.1 Introduction

The initial objectives for this research study as set out in Chapter 1 were as follows:

- ❑ To identify and analyse strategic management issues in the global container shipping industry;
- ❑ To compare and contrast different approaches to strategic management in the global container shipping industry; and
- ❑ To analyse organisational pressures facing competitors in the global container shipping industry.

This concluding chapter provides a discussion and review of the achievement of each of these objectives. Further, given that many questions, as well as answers, have been raised by the findings from this research, a number of potential future research topics are suggested. The chapter begins with a discussion and critique of the research methodology employed, highlighting some of the constraints associated with the work.

8.2 Constraints and limitations

Gaining access to senior managers is generally exceedingly difficult for most researchers (Bonoma, 1985). While sufficient access was allowed to collaborating organisation Sea-Land management, access to Evergreen management (a direct competitor of Sea-Land) proved to be more difficult. However, the interviews that were undertaken with Evergreen managers, coupled with the earlier pilot study, generated sufficient data to ensure a degree of comparison. Ideally, the research would have benefited from two

collaborating organisations, rather than one, although obtaining agreement from two competitors would inevitably be very difficult to achieve.

A number of limitations to the research were highlighted in the methodology section (Chapter 2). In addition to difficulties commonly associated with interviewing senior management of organisations, the principle limitations of the research relate to the relatively small sample size, and the dominant focus of interviews on the collaborating organisation. These limitations, which relate to the research design, inevitably raise questions concerning the validity, reliability, and generalisability of the results.

However, the alternative of widening the sample was not available, given the resource implications this would have entailed (e.g. travel costs), in addition to difficulties associated with gaining access to organisations competing with the collaborating entity. Moreover, the very high level of management access that the researcher gained (within the collaborating organisation) has arguably resulted in collection of substantial primary data that would not have been possible in the absence of a collaborating organisation. Collaboration has therefore added considerably to the richness of data presented in the thesis.

A further difficulty concerned the geographic location of interviews. Any attempt to investigate global organisations, and their activities, inevitably demands a degree of attention be paid to activities and management in each of the major global trading regions. This is a difficult challenge for the researcher to overcome, not least because of the high cost of travel.

Although interviews with Sea-Land managers were held in the UK, in continental Europe, and in the United States, it was found that several of these managers had previously held senior positions in other locations, such as the Far East, Middle East, Former Soviet Union, and Latin America. To a lesser extent the same was true with Evergreen interviewees. Interviewees were therefore well aware of key issues involved in trading to and from most global regions, and were able to provide reasonably informed opinions and views relating to such issues. This therefore helped, to some degree, to militate against the absence of interviews held across all major global regions.

In addition to managerial access, and geographic limitations, the research also suffered to some extent from company and industry changes taking place over time. Like most global industries today, the container shipping business is subject to change. These changes range from constant merger and acquisition activity, and route/service alterations, to fleet expansion, in addition to socio-economic/political upheaval in certain regions. For example, during most of the period of the research, there was constant industry rumour of a Maersk Line takeover of Sea-Land. Maersk's subsequent acquisition of Sea-Land was finally confirmed in late 1999, just after data collection for this study had ended.

Whilst in the event of a takeover the pressures for global operational integration and for local responsiveness are unlikely to alter, it seems inevitable that a new owner with a different philosophy will alter somewhat the strategy and overriding strategic orientation of Sea-Land. This will imply a change in mode of operation and hence strategic emphasis, given Maersk's alternative choice of strategy (e.g. constantly building and introducing more ships and containers).

Notwithstanding these constraints and limitations, the largely phenomenological comparative case study research approach employed has permitted the researcher to analyse corporate strategy in the global container shipping industry in some detail. Application of a theoretical framework (Prahalad & Doz, 1987) as a template to help facilitate data collection and analysis (Yin, 1984), aided categorising and enabled the researcher to gather primary data in a structured manner. The subsequent analysis of organisational pressures on organisations in respect of global integration and local responsiveness in container shipping brought out many issues. The analysis also enabled the researcher to highlight significant differences in strategies adopted by competitors undertaking business activities in the same industry.

Further, the analysis provided sufficient themes and patterns to facilitate 'grounding' out of a new theoretical framework (Glaser and Strauss, 1967) that explains *strategic choices* in container shipping. This framework can be used as a basis for interpretation of the global container shipping phenomenon from a

managerial perspective. It can also be used as a teaching tool to facilitate greater understanding of the industry.

8.3 Strategic management issues

The first objective of the research was to identify and investigate strategic management issues in the global container shipping industry.

A priority in any global strategy will be to achieve low costs and high efficiency (Porter, 1986). Container lines seek to achieve this through a combination of economies of scale and scope. Ever larger ships, terminals, and expanding market reach provide for economies of scale, while economies of scope are gained primarily through the sharing of physical assets across markets. Alliances offer a mechanism whereby lines can share assets, and thus enjoy these benefits. But alliances are not always the basis for stable long-term relationships (Ohmae, 1989), and this is to some extent explained through Sea-Land's use of the term, "*alliances among enemies*", with specific reference to container shipping. However, while global alliances among liner companies appears to be the norm, Evergreen functions to a significant degree as a "*stand-alone*" carrier, typically only venturing into alliances as a "*stepping-stone*" to gain access to more difficult markets.

Global container shipping activity is subject to the three 'countervailing powers' of state, shippers, and competition (Nayar, 1996). Liner shipping managers must deal with different legislation across and even within markets, although the statutory requirements in the USA appear particularly onerous, even with recent reforms (e.g. OSRA 98'). Introduction of new liner shipping regulations in certain Asian markets could inhibit the industry further.

The (increasing) bargaining power of global shippers, coupled with the lobbying function of Shippers' Councils, also represents significant pressure, especially on freight rates. Meanwhile, intense industry rivalry between carriers constitutes a very real restraint on price increases, more often resulting in price cutting.

While the industry appears to have become even more concentrated due to the formation of several global alliances, the reality is that operational consolidation has not resulted in commercial consolidation (Kadar & De Proost, 1997). Essentially, a large number of competitors are still active in the market, although there are signs that this may change if the spate of recent mergers between major operators continues. Nevertheless, with so many carriers (and other entities) competing for business, a fundamental challenge for every competitor is how to differentiate services in the eyes of the customer, and thereby achieve competitive advantage.

With most major carriers offering a standardised range of containers, similar service networks, and ports of call, differentiation has been notoriously difficult to achieve. A possible menu of solutions includes more targeted marketing, better customer segmentation, tailored services, and simpler pricing. Shipper surveys indicate that many customers want lines' to provide an "*overall service package*", combining an attractive service, competitive price, and value-added capability. The evidence also suggests that today's shippers consider liner conferences to be largely irrelevant, and larger shippers in particular are keen to build longer term partnerships with carriers themselves, rather than with liner shipping representative bodies (e.g. conferences).

A further key motivation influencing provision of a global service relates to the need to counteract trade imbalances in the most cost-effective manner possible (Kim, 1987). Global carriers appear to achieve this objective in different ways. For instance, Evergreen is largely reliant on its Round-The-World services, and to a lesser extent on pendulum and end-to-end links, for moving containers to areas of demand. Conversely, Sea-Land appears more reliant on strategic alliances, and container sharing, to minimise repositioning costs.

The study has encountered difficulty in probing in more detail the important aspect of finance in global container shipping. Most lines are ultimately reliant on parent companies to provide finance for investment. However, while the raising of capital is one thing, findings from this research suggest the focus of investment differs between Sea-Land and Evergreen. While Sea-Land largely

concentrates investments in landside activities, and terminals, less so on marine activities, Evergreen directs its attention towards investments in ships and containers. These and other differences associated with the strategies of both lines' are discussed further in section 8.4 below.

8.4 Differences in management approach

The second objective of the study was to compare and contrast different approaches to strategic management in the global container shipping industry, based on the hypothesis that firms can provide a global container service in different ways, in particular through configuring their resources and operations differently. To achieve this objective, Chapters 5 and 6 employed a comparative case study approach in order to undertake analysis of two of the leading global container shipping lines, Sea-Land and Evergreen.

Although Sea-Land and Evergreen clearly adopt rather different approaches toward provision of their respective global transport networks (e.g. Evergreen's RTW service, Sea-Land's global alliance etc.), it remains that both lines' vessels call at virtually the same ports worldwide, and where they do not call at the same port, they tend to call at a port nearby. This rather suggests, at least in the eyes of many customers, that both lines essentially provide homogeneous service (i.e. a container transported door-door via the same, or virtually the same ports), and therefore compete directly against each other.

Where substantial differences do exist between Sea-Land and Evergreen, these relate to the way in which each firm goes about organising its assets and operations, what has been termed here as *modes of operation* (Jankowicz, 1995). These differences inevitably reflect choices carriers make in regard to the strategy selected in order to gain competitive advantage. Findings from this study suggest these different approaches are very much connected with the dominant philosophy prevalent within each firm.

For example, Sea-Land adopts what is termed here an *intermodal orientation*, in that the company places great stress on its intermodal capability and terminal

operations, with rather less emphasis on ships (which are often chartered - and less frequently built new compared to other lines) or containers (of which a large proportion are leased or shared with other lines). The founder of Sea-Land, Malcolm McLean, maintained there was a need to retain control of terminals as a crucial element in the company's corporate strategy. This belief lives on today, even though port operations and labour practices, not to mention increasing port competition, has significantly altered (generally positively) over the past two-three decades. This intermodal orientation is to some extent justified by Sea-Land management stressing the point that, with most liner shipping costs incurred on the landside, "*why bother about the ships?*"

Conversely, still headed by its founder Chang Yung-fa, Evergreen is described as *maritime oriented* in that the company are constantly building new vessels and containers, yet have significantly less investments on the landside where third party service providers (e.g. terminal operators, hauliers, railroads) are preferred to in-house operations.

In each instance, the importance of what Bartlett & Ghoshal (1989) describe as a firm's *administrative heritage* is clearly evident: the legacy of McLean, originally a trucker, lives on in Sea-Land's dominant landside orientation, whereas Chang's seagoing background heavily influences Evergreen towards a dominant maritime orientation.

A further key difference relates to the respective corporate organisation structures. While all key Sea-Land trade divisions are headquartered in Charlotte, Evergreen devolves trade and pricing responsibility to separate headquarters located in each of the main worldwide trading regions (e.g. New York, Hamburg, Tokyo, and Taipei). Moreover, while Evergreen favours employing predominantly Taiwan nationals to take responsibility for key functions in most overseas markets, Sea-Land largely adopts a local recruitment policy, unless this is considered unrealistic given the limited skills available in particular markets (e.g. Central America).

Clearly, a key challenge in any global strategy will be to determine which links in a firm's value-added chain should be centrally coordinated, and which links should be decentralised and managed locally (Kogut, 1985). According to Sea-

Land, a fundamental pressure for centralisation (or rather what Sea-Land terms *integration*), relates to the fact that fewer shippers are nowadays controlling more world trade; just 100 shippers control an estimated 25 per cent of all East-West trade (Drewry, 1992), and these global shippers now wish to negotiate on a worldwide basis with just one office. Evergreen take an opposite view, seeing the global shipper as something of a threat in that an increase in bargaining power enjoyed by shippers can only mean one thing, lower freight rates. In turn, Evergreen prefers to leave pricing responsibility in the hands of regional centres, rather than centralise this function within the head office in Taipei.

While Evergreen has a long-standing philosophical dislike of conference rate agreements, Sea-Land is a member of all relevant conference rate agreements. However, even for Sea-Land the benefits (of membership) are increasingly regarded by the line's own executives to be uncertain. Ultimately, pressure from global partner Maersk for Sea-Land to remain in the relevant liner conferences must also be a factor, as it would be unthinkable for one of the partners in an alliance to be a signatory, while others operated as independents, free to undercut rate agreement lines, and more especially its 'partners'.

Evergreen's estimated market share of the main East-West container trades suggests it has a more dominant overall 'global' position than Sea-Land, the latter being especially weak by comparison on the Europe-Far East trade. Sea-Land, however, benefits from a protected position on US 'domestic' trades, and in the carriage of US military cargoes (although revenues from military cargo appear to be in long-term decline).

Yet in terms of financial returns, Evergreen's maritime oriented strategy has been more successful than Sea-Land's intermodal orientation. Until the mid 1990's, Evergreen consistently achieved higher profits (relative to the industry average) on what appeared to be a moderate asset base and revenues. Intense pressure on freight rates during the last few years of the 20th century has succeeded in reducing Evergreen profits, while Sea-Land and many other lines have gone into the red.

Differing profitability levels, and reasons for these differences, have not been analysed in depth during this study. The main focus of the research has been

directed towards identifying strategic management issues, and assessing organisational implications associated with operational integration and local responsiveness in a global industry. Differences in profitability must ultimately reflect the strategic choices liner operator management makes in regard to preferred mode of operation, the latter also reflecting each company's dominant philosophical orientation and beliefs. In this regard, given the evidence gathered during this research project, one must conclude that the overall mode of operation (reflecting strategic choices) favoured by Evergreen Line appears to be relatively more successful than that adopted by Sea-Land. Nevertheless, the issue of variable levels of profitability among competitors in liner shipping merits further research, and this issue is discussed in a later section of this concluding chapter.

8.5 Global industry pressures on the organisation

The third objective of the research was to analyse organisational pressures facing competitors in the global container shipping industry. In this study the '*Integration-Responsiveness framework*' (Prahalad & Doz, 1987) was employed to help identify, and thereafter analyse, pressures for operational integration and for local responsiveness in the container shipping industry. Employing an established theoretical framework in this way permitted data collected to be categorised and analysed in a structured manner.

Criteria explicit in the framework facilitated an extensive analysis of the many pressures facing competitors in the global container shipping industry. On its own, this depth of analysis was regarded as worthwhile and informative, and helped to facilitate greater understanding of a relatively complex phenomenon. The criteria contained in the framework were deemed to be comprehensive, and there did not appear to be any omission of significant factors or pressures facing global businesses in the context of the dual needs for operational integration and for local responsiveness.

However, it was noted during the research that the framework had been developed primarily for analysis of production industries. A consequence of this is that certain criteria, in particular ‘access to raw materials and energy’, were found to be less relevant so far as the service sector is concerned. The definition of ‘distribution channels’ was also questioned, as the terminology used in this context by the authors of the framework differed from the meaning normally associated with this activity by transport researchers.

With regard to container shipping, key activities identified that require a high degree of global coordination included (global) pricing, and procurement and operation of major assets. The growing dominance of large multinational customers (shippers) has resulted in a greater element of single sourcing, and MNC’s are clearly becoming more significant in all trades. These pressures imply a high degree of global coordination is necessary to enable liner shipping operators to meet the evolving demands of an ever-changing marketplace. Coordination is also essential when a global carrier is required to alter service schedules to take account of changing customers needs, or as a response to the actions of other global and regional competitors.

In container shipping, the need for global integration is also high, in particular due to pressures to reduce costs, but also due to the universal nature of the container itself, the latter being what Levitt (1983) might describe as a standardised or homogenised global product. Lines tend to rely on relatively few strategically positioned global transshipment terminals as network hubs, and this too necessitates a high degree of global operational integration. While scale economies achieved as a result of each increase in available ship size appear to be especially important in the quest to reduce unit costs, the increased capacity of ships inevitably implies that global operational networks must be better integrated to ensure additional capacity is well utilised.

Simultaneous to the need for global coordination and integration, diverse customer needs, local competition, and host government demands clearly make local responsiveness a critical issue. Even in today’s global business environment, many customers still demand different levels of service on each separate trade lane. Further, different laws and regulations in each market forces

lines to be locally responsive. In addition, variations in market structure, with strong regional competitors present in some markets, forces global carriers to think local as well as global.

These findings suggest that Sea-Land and Evergreen have to manage what Prahalad & Doz (1987) call a *multifocal* business, in which demands for global integration and for local responsiveness must be managed simultaneously. This means that, while certain elements of strategy must be managed centrally, other activities have to be managed regionally or locally. Managers must therefore focus their attention on aspects of the business that require global integration and coordination, and aspects that demand local responsiveness. As in other global industries, competitors in the global container shipping industry need to be aware of these conflicting pressures, and establish an organisation structure that permits managerial decision making to reflect multiple points of view.

8.6 Strategic choice theoretical framework

As more and more information was gathered during the study, gradually a pattern emerged that enabled the researcher to develop theory relating to the subject matter in question. Based on this grounded theory approach (Glaser & Strauss, 1967), a valid theoretical framework has been developed which can be used as an analytical tool to help explain the principal *strategic choices* facing competitors in the global container shipping business. The *strategic choice in container shipping* framework sets out the principal options global carriers must select from in deciding the organisational and competitive approach they wish to adopt in order to compete in the industry.

The framework contains two main component parts, *assets* and *operations*. With regard to assets, it is evident from this study that the two carriers investigated adopt quite different approaches. For example, Sea-Land readily admits to a strategy whereby the company is moving out of owning/operating a large fleet of ships and containers, and instead focusing attention on landside activities (e.g. terminals, inland transport, and value added functions). To a large

extent Evergreen adopts the reverse strategy, with major investments in ships and containers, and less direct involvement in landside activities.

Within the framework, the link between *assets* and *operations* is particularly significant. For example, Sea-Land is arguably only able to move out of maritime hardware due to the nature of its global alliance with another carrier, Maersk Line. This agreement permits Sea-Land to share the Danish carrier's ships. Application of the framework to the Sea-Land and Evergreen organisations also revealed different approaches in respect of aspects such as global organisational structure, overseas representation, operational application of information technology, and trade agreements.

As Prahalad & Hamel (1990) have argued, *the* global challenge is to ensure that organisational capability facilitates strategy implementation. The *strategic choice* framework presented in Chapter 7 essentially sets out the important resource-base choices available to firms competing in the global container shipping business. The specific choices that are made by liner shipping managers will obviously be influenced by many factors, not least the availability of financial resources, as well as the quality of managerial skill and judgement. But ultimately, the organisation's capabilities must at least partly be determined by the choices liner shipping executives make (subject to the impact of wider business environment influences). It is these choices which, crucially, will represent the organisations capability at a given point in time.

The framework can be employed by industry managers as an analytical tool, to be used alongside general business environment and other appropriate strategic management frameworks to aid decision making and strategic planning. It may also be used as a teaching aid for industry managers and trainees, and for students on transportation courses, to help explain and elaborate strategic management issues in the global container shipping industry. Finally, the framework could be applied/tested by other researchers in the course of further study into the global container shipping industry.

8.7 Directions for future research

Many of the major lines operating within the various global alliances appear to be adopting a strategy similar to Sea-Land in seeking to provide what Cheon Kyu (1991) described as a *high level intermodal service and global network*. This strategy includes providing fast transits, multiple and frequent service options, extensive intermodal capability, and value-added activities on a worldwide basis.

Evergreen's success, however, would seem to suggest that not all of these service attributes may be necessary, although this must inevitably relate to the dominant customer segments targeted by a given line, segments within which by implication shipper needs may vary. An important issue to explore, therefore, and where further research is necessary, would be **to identify different container shipping customer segments, and establish key requirements of each shipper segment in relation to overall liner container service provision.**

As Evergreen is constantly building new vessels, it is hypothesised that a more likely explanation for that company's superior profits, relative to the industry in general, perhaps lies in the area of vessel financing, and/or tax treatment in respect of capital costs associated with ship acquisition. Thus, a further relevant research study would be **to compare and evaluate container vessel capital cost financing and related taxation treatment (including depreciation) across countries.** As Evergreen and the Danish carrier Maersk Line currently dominate the industry as far as container ship newbuildings worldwide are concerned, it is recommended that such a study should focus on ship financing and taxation regimes applicable to new vessels owned by these shipowners in particular.

Further research could also be undertaken through **application of the *strategic choice* framework to a sample of global container shipping competitors.** Such research could, for instance, seek to identify the existence of strategic groups of competitors, with each group adopting and therefore being reflective of a common approach. This research could also permit identification and

further examination of differences in strategy. A key objective of such research, however, would inevitably be to test the framework's applicability and, where appropriate, to refine it.

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APPENDIX A: Interview Programme

Sea-Land Service Inc.

Number	Date	Name	Position	Place
I:1	9/11/1993	Nick Wilde#	Marketing Director, UK & Eire	Watford
I:2	8/12/1993	Ian Bell#	Scottish Sales Manager	Grangemouth
I:3	8/12/1993	Alan Paterson#	Port Manager	Grangemouth
I:4	13/7/1994	Kelvin Wilden*	Operations Manager	Felixstowe
I:5	13/7/1994	Colin Graves*	Manager of Quality	Felixstowe
I:6	13/7/1994	Nick Wilde*	Marketing Director, UK & Eire	Felixstowe
I:7	13/7/1994	Phil Wise*	Terminal Manager	Felixstowe
I:8	27/7/1994	Mark Tonge*	International Marketing Manager	Rotterdam
I:9	27/7/1994	Walter Vollemaere*	Marketing Manager Intra-Eur.	Rotterdam
I:10	27/7/1994	David Sage*	Director Financial Processes	Rotterdam
I:11	27/7/1994	Richard Van Amen*	Global Accounts Manager	Rotterdam
I:12	13/7/1994	Bruce Coupland#	Senior Terminal Planner	Felixstowe

Evergreen Marine Corporation

Number	Date	Name	Position	Place
I:13	15/11/1994	Calum MacGregor*	Scottish Area Manager	Glasgow
I:14	21/4/1994	Iain Phillips*	Export Manager	London
I:15	11/5/1995	Iain Phillips*	Export Manager	London
I:16	11/5/1995	Peter Edward*	Quality Manager	London

Sea-Land Service inc.

Number	Date	Name	Position	Place
I:17	24/6/1996	Terry Grange~	Director Corporate Marketing	Charlotte, NC
I:18	24/6/1996	Klaas Moerkerken~	Director Global DYM\$	Charlotte, NC
I:19	24/6/1996	Michael Kramer~	Director Americas Division	Charlotte, NC
I:20	24/6/1996	Bob Szewczyk~	Director Atlantic Division	Charlotte, NC
I:21	24/6/1996	Will Middleton~	Executive Vice President	Charlotte, NC
I:22	24/6/1996	Jim Watkins~	Vice President IT	Charlotte, NC
I:23	24/6/1996	John Gilmore~	AME Manager	Charlotte, NC
I:24	24/6/1996	Paul Newbourne~	Director Global Accounts	Charlotte, NC
I:25	24/6/1996	Sunil Dhamankar~	Director Operations Research	Charlotte, NC

Interview covering general industry topics/questionnaire/research methods etc.

* Interview using questionnaire derived from the Prahalad & Doz (1987) framework

~ Interview testing '*Strategic choice in container shipping*' framework

APPENDIX B: Questionnaire

STRATEGIC COORDINATION

1. Importance of multinational customers

- a) Dependence on global customers?
- b) Do MNCs demand the same level of service worldwide?
- c) Do MNCs have centralized vendor certification?
- d) Proportion of container services sold from the centre/locally?
- e) How is worldwide pricing and service strategy coordinated?

2. Presence of multinational competitors

- a) Who are the main competitors operating in multiple markets?
- b) How does the organisation develop an understanding of MNC competitors strategic intent?
- c) What mechanisms are used to gather intelligence?
- d) Type of response required to effectively deal with competitors actions?
- e) Types of MNC competitors within the three trading areas of Europe, Asia and North America?

3. Investment intensity

- a) How investment intensive is container shipping?
- b) How critical is there a need to leverage this investment worldwide?
- c) How critical is there a need for speed of development and implementation of service strategy worldwide in order to make large initial investments profitable?
- d) How important are economies of scale?
- e) Does a wider network of mainports make a company less or more competitive?
- f) What is the impact of consortia/VSAs on investment?

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- g) Are a major proportion of assets concentrated on busiest or more lucrative routes?

OPERATIONAL INTEGRATION

1. Technological intensity

- a) Does technological intensity necessitate concentration of operations in only a few selected locations (e.g. hub and mini-hub ports)?
- b) Does having fewer main operational sites allow easier control over quality, cost, and new service introduction?
- c) Which carriers enjoy proprietary technological advantage (or any other technological advantage)?
- d) Do carriers hub and spoke networks differ in the main trading regions of Europe, North America and Asia?
- e) What has been the impact of automated terminals, hatchless ships, etc.?
- f) How are sailing schedules integrated for mainhaul and feeder services across trades?

2. Pressure for cost reduction

- a) Are assets sourced from low-cost locations (e.g. ships, containers etc.)?
- b) Where are ships registered (crewing costs)?
- c) Ship capacities and economies of scale issues?
- d) Are you reducing the number of mainline calls at hub ports and extending feeders networks (hubs serving multiple national markets)?

3. Universal needs

- a) What pressures are there for service adaptation across national markets?
- b) Regional/national differences in equipment types?
- c) Competing non-containerised services?

4. *Access to energy*

- a) Main source of energy?
- b) Are mainports where carriers gain access to a cheap supply of fuel?
- c) Can fuel costs influence port selection?
- d) Method of purchase for bunker fuel

PRESSURES FOR LOCAL RESPONSIVENESS

1. *Differences in customer needs*

- a) Where are customer needs national or regional specific?
- b) Do certain customers have similar needs across global markets?

2. *Differences in distribution channels*

- a) Different methods/terms of sale in particular markets?
- b) What local/regional regulations impact?

3. *Availability of substitutes and need to adapt*

- a) On which trades can customer needs be met by a local substitute?
- b) Does container 'product' or liner service need to be adapted across markets?

4. *Market structure*

- a) In which trades are local competitors strongest?
- b) Views on continuing concentration of global container shipping industry?

5. *Host government demands*

- a) What forms can such demands take?
- b) What impact/effect/costs do they entail?

Questionnaire based on Prahalad & Doz (1987) Integration-Responsiveness framework and adapted for application in the container shipping business

APPENDIX C: Glossary of technical terms

ANERA	Asia North America Eastbound Rate Agreement
BAF	Bunker adjustment factor (imposed due to fuel price increases)
BOT	Build-Operate-Transfer (container terminal)
CAF	Currency adjustment factor (imposed due to adverse currency fluctuations)
CIF	Terms of sale inclusive of 'cost of goods, insurance and freight'
EC	European Commission
End-to-end service	Linehaul service on one trade lane
EPZ	Export Processing Zone
ESC	European Shipper's Council
EU	European Union
FAK	Single container rate for 'freight all kinds'
Feeder service	Small ship connecting with linehaul vessel at hub port and carrying containers on short sea routes
FEFC	Far Eastern Freight Conference
FEU	Forty-foot equivalent unit (container)
Flag out	Carrier registering vessels under flag of convenience
FOB	Freight payable at destination – freight payable to port of departure only – i.e. 'free on board'
FMC	Federal Maritime Commission (USA)
GATT	General Agreements on Tariffs and Trade
Grey box	Container shared by two or more carriers
Liner service	Regular, scheduled shipping service on a given route
Linehaul ship	Ship serving deep-sea or inter-continental trades
MNC	Multi-national corporation
Newbuilding	New ship
NITL	National Industrial Transportation League (USA)
NVOCC	Non-Vessel Owning Common Carrier
OSRA 98'	US Ocean Shipping Reform Act, 1998
Out-of-gauge	Cargo that does not fit into a standard container
Pendulum service	Linehaul service taking in two trade lanes
Reefer	Refrigerated container
Relay ship	A deep sea ship transshipping containers onto another deep sea (i.e. relay) ship
RoRo	Roll-on Roll-off ship
RTW	Round-The-World container service
TACA	Trans-Atlantic Conference Agreement
Shipper	Customer of container line (e.g. exporter)
Slot sharing	Carriers sharing container ship (slot) capacity with other lines
TEU	Twenty-foot equivalent unit (container)
THC	Terminal handling charge
UCC	Ultra Container Carrier (hatchless ship)
UNCTAD	United Nations Convention on Trade and Development
Wayporting	Linehaul ships carrying intra-regional cargo (e.g. intra-Asia)
WTO	World Trade Organisation
WTSA	Westbound Transpacific Stabilisation Agreement