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WORLD MARITIME UNIVERSITY
Malmö, Sweden

**COMPETITIVE STRATEGIES
FOR CONTAINER PORTS**

Analysis of competition and competitors in the Hamburg-Le Havre range

By

BERNARDO FLORES HERRERA
Mexico

A dissertation submitted to the World Maritime University in partial
fulfillment of the requirements for the award of the degree of

MASTER OF SCIENCE

in

PORT MANAGEMENT

1999

DECLARATION

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

.....

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ACKNOWLEDGMENTS

I am taking this space to express my sincere gratitude to all the organizations and individuals who made this part of my carrier development an entire success.

First of all, I would like to thank to the Global Foundation for Research and Scholarship for investing in my development and to let you know that wherever I go I will remember this invaluable opportunity that people from Japan have given me.

Next, I want to show my appreciation to the World Maritime University staff and my professors for their contribution to my academic experience. Special thanks go to Dr. Bernardo Francou for his guidance and for his belief in this project since the beginning. Moreover, to Dr. Ma Shuo for his effort to expand this Masters with his knowledge and expertise.

I want to express all my love to my parents and my entire family in Mexico.

“Gracias Papa y Mama por enseñarme que la base de todo éxito es el esfuerzo constante y gracias por hacer de mí un hombre de bien. A mis hermanas y cunados gracias por su incondicional apoyo y para mis queridos sobrinos Fernando, Armin, Noe y Abraham quienes son parte de mi motivación y espero que en un futuro no muy lejano ustedes saboreen esta satisfacción indescriptible.”

Finally, I would like to thank my wife Kathy for being the source of my inspiration and the motivation of my life, as well as for her tolerance of all the inconveniences during this time. However, you may be sure that in the future wherever we go will be the best because we will be together.

ABSTRACT

Dissertation Title: **“Competitive Strategies for Container Ports”. Analysis of competition and competitors in the Hamburg-Le Havre range.**

Degree: **MSc.**

The dissertation points out the relevance of Competitive Strategies as a tool for Port Managers to succeed in the market through the use of economic concepts, analytical techniques for the industry, and competitors analysis. Furthermore, this paper proposes a specific process to show how the analysis of the industry and competitors in the container port industry must be carried on. The process is shown in a practical way using the Hamburg Le Havre range as the market to be analyzed.

The EU integration process and its legal implications on competition are analyzed as an introduction to the market. The development of the intra and extra EU trade is a catalyst to the container port competition because it points out the need for reliable distribution channels. Moreover, this development of trade and the EU GDP are analyzed together with container traffic growth. The results show a strong correlation and provide the foundation for forecasting traffic for this area in the next ten years.

Two innovative tools are suggested for the analysis of competitors. The Flower of Competition analyzes the competitiveness of the port in the range using seven factors for competition showing a clear view of these competitors in the market. The Questionnaire on Competition gives an overview of competitor point of view about their particular markets. The questionnaire was sent to different players in the range.

This paper concludes by processing the results of the industry and competitors analysis as well as the market trends and customer requirements. It proposes a more suitable Competitive Strategy that considers also the classification of ports proposed in this paper, and the competitiveness and specific characteristics of each port.

KEYWORDS : Analysis, Competitive, Competitors, Market, Port, Strategy, Tools.

TABLE OF CONTENTS

Declaration	ii
Acknowledgments	iii
Abstract	iv
Table of Contents	v
List of Tables	viii
List of Figures	ix
List of Abbreviations	x
1. INTRODUCTION	1
2. COMPETITION. Theoretical Framework	
2.1 Economic Concepts of Competition	4
2.1.1 Competitive Supply	4
2.1.2 Perfect competition	5
2.1.3 Imperfect competition	5
2.2 Structural Analysis of Industries	6
2.2.1 Threat of entry	7
2.2.2 Threat of substitution	10
2.2.3 Bargaining power of customers	11
2.2.4 Bargaining power of suppliers	11
2.2.5 Rivalry between competitors	11
2.3 Generic Competitive Strategies	12
2.3.1 Overall cost leadership	12
2.3.2 Differentiation	13
2.3.3 Focus	13
2.4 Analysis of competitors	14
2.5 Port Industry Signals	14
2.6 Competitive Moves	15

2.6.1	Types of competitive moves	15
2.6.2	Threatening moves	16
2.6.3	Defensive moves	16
3.	THE IMPORTANCE OF PORTS IN THE EUROPEAN UNION	
3.1	The European Union (EU)	18
3.2	Economic growth of the E U in the International Framework	19
3.2.1	External and Internal trade of the EU	21
3.3	European Port Policy	23
3.3.1	The four axes of the EU Port Policy	24
3.4	European Ports Overview	25
3.4.1	Similarities and differences in the HLHr	25
3.5	The EC Competition Law	28
3.6	The Green Paper	29
4.	CONTAINER COMPETITION IN EUROPE	
4.1	Container Development in Europe	33
4.2	Containerization traffic growth and forecasting	35
4.3	The competition in the Hamburg–Le Havre range	36
4.3.1	Type of port competition in the range	38
4.4	Competitors Analysis	39
4.5	The Competitors Feelings about the Competition in the Market	43
4.5.1	Feeling about the competition	44
4.5.2	Factors for competition and customers requirements	47
4.5.3	Competitive Strategies and market sensibility	50
4.5.4	Competitors assumptions and capabilities	51
4.6	Impact of the International Containerization Trend	53
4.7	Customers Requirements for European Ports	54

5. BUILDING COMPETITIVE STRATEGY	
5.1	Port Classification 58
5.1.1	Port classification in the Hamburg-Le Havre range 59
5.1.2	Defining Competitive Strategy 60
5.2	Building the Competitive Strategy for the port of Hamburg 61
5.2.1	The Competitive Strategy for Hamburg 61
5.2.1.1	The Focus Strategy 61
5.2.1.2	The Overall Cost Strategy 62
5.3	Building the Competitive Strategy for the Bremerhaven 63
5.3.1	The Competitive Strategy for Bremerhaven 63
5.3.1.1	The Differentiation Strategy 63
5.4	Building the Competitive Strategy for the port of Rotterdam 65
5.4.1	The Competitive Strategy for Rotterdam 65
5.5	Building the Competitive Strategy for the port of Antwerp 66
5.5.1	The Competitive Strategy for Antwerp 67
5.6	Building the Competitive Strategy for the port of Zeebrugge 68
5.6.1	The Competitive Strategy for Zeebrugge 68
5.7	Building the Competitive Strategy for the port of Le Havre 69
5.7.1	The Competitive Strategy for Le Havre 70
6. CONCLUSIONS	72
Bibliography	76
Appendices	
Appendix I	Traffic forecast for Europe and the Hamburg-Le Havre range 79
Appendix II	Factors for Competition 81
Appendix III	Questionnaire on Competition 84

LIST OF TABLES

Table 1.	Container handling equipment cost	8
Table 2.	Comparison of GDP growth rate	19
Table 3.	Comparison of GDP market prices	20
Table 4.	Participation in GDP by Member State	20
Table 5.	Trade participation in the world	21
Table 6.	Growth in trade in volume	21
Table 7.	EU exports 1997	21
Table 8.	EU imports 1997	21
Table 9.	Extra-EU trade by State	22
Table 10.	Participation in Extra-EU trade	22
Table 11.	Intra-EU trade in value	22
Table 12.	State participation in Intra-EU	22
Table 13.	Total EU trade participation by State	23
Table 14.	Participation in value 90-97	23
Table 15.	World Container Traffic	34
Table 16.	Europe in World Container Traffic	34
Table 17.	Container Traffic growth in %	34
Table 18.	Historical and projected throughput for Europe	35
Table 19.	Forecasted growth and throughput	35
Table 20.	Participation of the Hamburg-Le Havre range in Europe	37
Table 21.	Historical and projected participation in percentage on the HLHr	37
Table 22.	Historical and projected participation in throughput on the HLHr	37
Table 23.	Concentration measured by total traffic (TEU's)	38
Table 24.	“The Flower of Competition” in the Hamburg-Le Havre range	41
Table 25.	Competitive ranking	42
Table 26.	Intra Competition (1000 TEU's)	46
Table 27.	Main Container Operators	46
Table 28.	Level of the Quality of Service to Ships/Cargo provided by ports	59

LIST OF FIGURES

Figure 1.	Demand under perfect and imperfect competition	5
Figure 2.	Different market forms	6
Figure 3.	Forces driving industrial competition	7
Figure 4.	Barriers and profitability	10
Figure 5.	The three Generic Strategies	12
Figure 6.	Components of competitors analysis	14
Figure 7.	EU Port Policy axes	24
Figure 8.	Diversity of European Ports	25
Figure 9.	Similarities and differences in the Hamburg-Le Havre Range	27
Figure 10.	Hamburg-Le Havre range	36
Figure 11.	New generation of container vessels	53
Figure 12.	Port classification according to the quality of services provided	58
Figure 13.	Classification of ports in the Hamburg-Le Havre range	59
Figure 14.	Competitive Strategy for the ports in the HLHr	60

LIST OF ABBREVIATIONS

BLG	Bremen Lagerhus-Gesellschaft
DAE	Developing Asian Economies
EC	European Commission
ECSC	European Coal and Steel Community
ECT	Europe Combined Terminals
EEA	European Economic Area
EFTA	European Free Trade Area
EPP	European Port Policy
ESPO	European Sea Port Association
EU	European Union
FCL	Full Container Load
HHLA	Hamburger Hafen-und Lagerhus-AG
HLHr	Hamburg – Le Havre range
HPH	Hutchinson Port Holdings
IT	Information Technology
LCL	Less than Container Load
MSC	Mediterranean Shipping Company
NAFTA	North America Free Trade Association
PIS	Pilot Intelligent Systems
R&D	Research and Development
SSS	Short Sea Shipping
T-ETN	Trans-European Transport Network
USA	United States of America
VTS	Vessel Traffic System

CHAPTER 1

1. INTRODUCTION

“COMPETITIVE STRATEGY provide managers with the raw material for thinking about how to change the rules of the marketplace in their favor”¹.

Competition is not a new word for most of the industries around the world; moreover, competition gives to the industry capacity for expansion, technological improvements, innovation, and increases the quality of products and services.

Thus, it benefits customers since they will have the opportunity to choose between more than one supplier or product, to pressure suppliers to increase quality and to reduce prices. Similarly, suppliers benefit from competition since it makes the market more active, which requires more innovative management, marketing techniques as well as more strategic thinking. Also, suppliers can benchmark their products, staff and more important they can show to customers how good they are.

Therefore, every company competing in an industry has a competitive strategy, which may have been developed by a very well elaborated strategic process or by an emotional reaction to the competitive moves of others. Indeed, the success of both competitive strategies can not be discussed, but the risk involved in each gives an argument for study. Risk can be reduced if the strategy is built based on a structural analysis of the market and competitors in order to understand market forces and anticipate developments and competitive moves from competitors.

The port industry is not exempt of competition nowadays. With the constant increase in containerization the industry has been exposed to a very high competition. For instance, each Port Manager wants his own port to become the hub

¹ Gluck, F. (Mc Kinsey & Company, Inc) “comments about Competitive Strategy”, Porter, M. (1980)

port for its region. However, the problem arises because the port manager in the neighboring port is thinking the same way. Therefore, competitive strategies give the opportunity to port managers and terminal operators the possibility to achieve their goals with the best certainty level, the most effective moves and investing only in the necessary resources². Moreover, it provides managers with the perfect tool to understand the nature of the business, the environment where they are competing, the competitive capacities of their competitors and mainly gives them the capacity to lead the competition and change the market environment in their benefit.

This paper proposes a comprehensive structural analysis that copes with the aspects of the market analysis and suggests tools that give a very good perspective of the market evolution, competitors and its own position. This analysis goes in parallel with a practical study of the container port competition in the Hamburg-Le Havre range (HLHr) selected as the ideal market for this study. Thus, the goals are:

- To describe step-by-step in a practical way how to collect and analyze the factors that must be considered by decision-makers to choose competitive strategy.
- To suggest the methodology to decide the best strategy for the port based on the analysis of the factors for competition, and competitor position and possible competitive strategies.

The paper is organized in three sections covered over four chapters. The first section covers the theoretical framework, the second covers the industry and competitor analysis and the third section select the competitive strategies for each port.

First, the theoretical framework is established for analysis of the states of competition and the structure of the industry and competitors. So, the aim is to know the economic concepts applicable to determine the state of the market, the techniques for industry and competitor analysis, the forces driving the competition and their strategic implication in the industry, and finally, the techniques for understanding market signals and anticipation or response to competitive moves.

² Porter, M. (1980). p. 3 - 33

The second section is divided into two parts. Chapter 3 is the first part of the process; it introduces the market subject to be studied throughout the analysis of the development of EU from the political, legal and economic perspectives. Therefore, it is crucial to point out the importance of the port industry for the European economy, the legal measures taken for the EC to promote and regulate the port competition, and the magnitude of the trade in the region and where this trade is generated.

Chapter 4, as the second part of the section, points out the importance of European container traffic in the world, its development and at the same time the participation of the HLHr in this market. Moreover, this chapter tries to find out the relation of container traffic growth and some macro economic indicators such as GDP and trade in value, and the size of the market for the next five and ten years in order to set the targets for the strategy. Also, it tries to find out the type of competition that is actually taking place in the HLHr and the types of the future along with the tools that can be used to analyze competitors. Finally, the factors for competition that are driving the market in this particular region, and the market trends and customer requirements for this particular market are discussed.

Finally, section three (Chapter 5) is the conclusion of the process where the competitive strategy has to be chosen and built according to the result of the research. According to the analysis of the market and competitors the last step is to categorize the ports according to quality of services and to apply the most suitable competitive strategy for each port.

Indeed, success in any industry requires the use of tools that provides the clear information needed to take the right decision. The competitive strategy process gives not only the information but suggests the best competitive strategy for each particular situation. Despite the limitations in time, information and resources, this paper proposes innovative tools and techniques that can be easily adapted to any port around the world to build its own competitive strategy.

CHAPTER 2

2. COMPETITION. Theoretical Framework

The present chapter's aim is to introduce the economic concepts and different states of competition in order to have the base for standardizing this study and the framework for analyzing the structure of the industry and competitors.

First, the economic concepts determine if the market is in perfect, imperfect or in a state of monopoly. Next, industry and competitor analysis can be done through the study of the five competitive forces and their strategic implications in the industry. Moreover, the techniques for the study of competitors and customers can be applied to the construction of competitive strategies. Finally, this theoretical framework will establish techniques for the understanding of the market signal and the anticipation or response to the competitive moves.

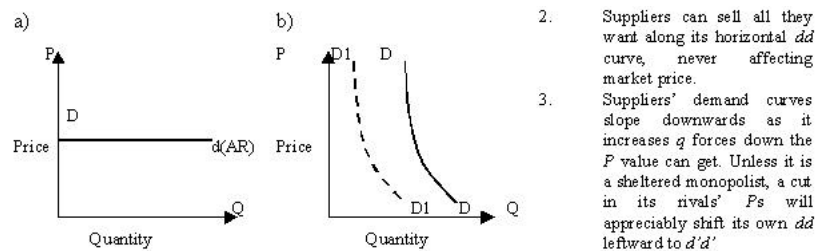
2.1 Economic Concepts of Competition

Before starting the study of the theoretical framework for analysis of industries, the container terminal industry competition, the analysis of competitors and competitive strategies, and the performance of competitive strategies it is necessary to understand the economic concepts of competition and to take it as the pillars of this study.

2.1.1 Competitive Supply

The theory of the inter-relation between price and competitive supply comes from the general assumption that companies maximize their profits. Although, imperfect competition is a deviation of perfect competition, the first one is only a theoretical possibility and the second is not, and can be divided into monopolistic competition, oligopoly and duopoly to pure monopoly where there is no competition at all¹. Figure 1 shows the behavior of the demand under perfect and imperfect competition.

¹ Samuelson, P and Nordhaus, W 'Economics' (1985) p.502 - 518



2. Suppliers can sell all they want along its horizontal dd curve, never affecting market price.
3. Suppliers' demand curves slope downwards as it increases q forces down the P value can get. Unless it is a sheltered monopolist, a cut in its rivals' P s will appreciably shift its own dd leftward to $d'd'$

Figure 1. Demand under perfect and imperfect competition. (Paul Samuelson 1985)

2.1.2 Perfect competition

Perfect competition occurs when no producer can affect the market price. Industries under perfect competition must have four main characteristics²:

- a) Large number of buyers and suppliers that a single one can not affect the market.
- b) Homogeneous or standardize products that can differentiate the industry.
- c) Customers and suppliers well inform about product quality required and offered.
- d) Freedom for customers and suppliers to entry or exit from/to the market.

Indeed, the container terminal industry in the HLHr can be near to this concept because it reasonably satisfies these four conditions. Finally, an important characteristic of perfect competition is that the market will tend to drive down prices and turn the competition in another direction such as quality of services or new technology, which means that the industry is arriving at a new stage.

2.1.3 Imperfect competition

All markets to a certain extent are imperfect. Markets, contrarily to perfect competition, can be affected by a single supplier who affects the market price by altering the supply³. Besides, the number of suppliers, behavior and influence in the three market types can be distinguished: duopoly, oligopoly and monopolistic competition. The main sources of imperfect industries are cost conditions and barriers of competition. Such sources arise when there is a small number of

² Samuelson, P. and Nordhaus, W. 'Economics' (1985). p.516 - 517

³ Craven, J. 'Introduction to Economics' (1990). p. 325

suppliers, when there are significant economies of large-scale production, when a product has patent protection, or when regulatory barriers preclude competition⁴.

Figure 2 describe the characteristics of each types of competition.

Type of competition	Suppliers and degree of product differentiation	Influence of firms over prices	Marketing methods
Perfect Competition	2. Many suppliers, 3. Identical products	None	Commodity exchanges or auctions
Imperfect Competition			
• Monopolistic Competition	• Many Suppliers • Product differentiation	Little	Advertising, Quality and design differences Often intense price rivalry
• Oligopoly	• Few suppliers • Product differentiation	Considerable	Advertising, Quality rivalry Administered prices
• Duopoly	• Two suppliers • Product differentiation	Considerably	Advertising, Public relations
Monopoly	• Single producer • No close substitutes	Considerable	Promotional and public relations advertising

Figure 2. Different market forms. John Beardshaw (1984).

These three cases of imperfect competition are clearly identified in the port industry and will be a matter of study in this paper in order to identify the state of competition at the local, regional and international level. After, depending on the state identified the question, “where is the competition focusing on?” must be answered. The next step is to analyze the competitors, and the final step is to construct the competitive strategy supported by the economic, theoretical analysis and data research.

2.2 Structural Analysis of Industries

The first problem faced during the analysis of competition is to establish the intensity that it has in a specific industry. This state of competition is the result of five basic competitive forces, which all together are essential for the strategy formulation. The competitive forces are threat of entry, threat of substitution, bargaining power of buyers, bargaining power of suppliers and rivalry among current competitors⁵. Their interrelation is shown in the figure below.

⁴ Beardshaw J. ‘Economics: a student’s guide’ (1984)

⁵ Porter, M. ‘Competitive Strategy’ (1980). p. 3 - 33

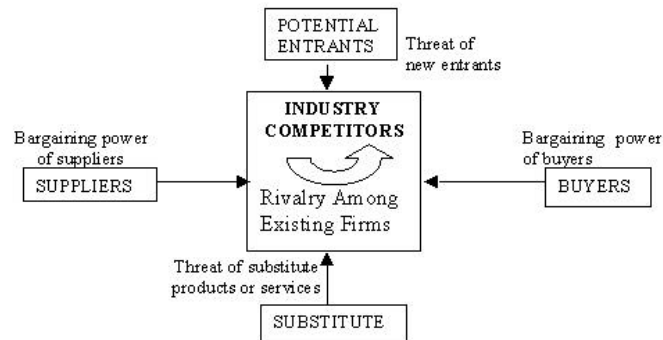


Figure 3. Forces driving industrial competition (M. Porter 1980)

2.2.1 Threat of entry

New competitors in the market bring new capacity, desires to gain market share and sometimes new resources. However, the entry depends on the barriers to entry and the reaction of the actual competitors. The HLHr where 13,7 million containers were handled in 1996⁶ is not exempt of such entry barriers. The entry barriers listed below are factors that will determine the competitive environment that new competitors will face in the market.

Economy of scale is a barrier of entry for the container operators, in the sense that it forces the new competitor to face the entrance in a large scale. As a consequence new competitors have to start at the small-scale level and fight against the cost disadvantage. For instance, Hesenatie handled 1,190,893 cont. (1996) and Marine Terminals only 91,548 cont. in the same period⁷. This means that Hesenatie can take advantage of the economy of scale because of a big flow of cargo.

Product differentiation is related to the customer loyalty and prestige that was built by past or actual competitive strategies such as being the first in the industry. It can build a barrier for entry because the new players have to spend a lot in marketing, technology and other factors. Moreover, they have to be aware of possible losses in the beginning of the business. This threat could be avoided through the introduction

⁶ Containerization International Yearbook 1998, p. 8 - 12

⁷ Containerization International Yearbook 1998, p. 28 - 57

in a specific sector of the industry “niche”. For example, ports like Zeebrugge, where the local cargo flow is relative low, can expand their activities to transshipment taking advantage of the geographical location, draught and new terminal developments.

Capital requirements are in all industries a threat of entry, since, in order to be competitive the new player needs to invest large amounts of financial resources. The cost of fitting a standard container terminal, which in the landlord system is paid for by the private operator and serviced by the authority, varies according to the handling system chosen and the type of traffic expected. In order to illustrate this cost lets take as an example the yard gantry system and straddle carrier direct system.

Yard Gantry System			Straddle Carrier Direct System		
No	Equipment	Cost (\$US 000)	No	Equipment	Cost (\$US 000)
2	Gantry Cranes	12,000	2	Gantry Cranes	12,000
2	RTG's	5,000	9	Straddle carrier	7,560
10	Tractors	1,100		TOTAL	19,560
10	Trailers	150			
	TOTAL	18,250			

Table 1. Container handling equipment cost. *Source:* UNCTAD (1996 prices)

Switching cost this is a one-time cost facing the buyers who switch from one supplier to another. Although the container transport as a whole is mostly standardized, this problem is faced because of the increasing size and new technology of container vessels, the quality of the service and turnaround required by the shipowners. This is the case of the consortium where Hesseantie/MSK with local shippers is constructing a new terminal in Antwerp⁸.

Access to distribution channels the new competitors need to secure the appropriate means for distribution of their products or services. In the case of container terminals such distribution channels can be the need for inland services for the FCL and LCL. In other words the new competitors in this particular market have to assure a reliable system of container and cargo distribution to shippers and

⁸ Fairplay (June 18, 1998). p. 22 - 23

shipowners such as by road, rail, inland waterways and sometimes air transport. For example, the HLHr has projects such as, block trains between Sweden and Germany /Benelux and a combined transport service between Belgium and France. Another projects in process are inland waterway between Dorpen-Rotterdam and Lille-Antwerp, and development of satellite information for the service Hamburg-Prague⁹.

Cost disadvantage independent of scale this entry barrier is reflected in several factors as a proprietary product technology, favorable location, government subsidies and experience curve. For this paper, the factors that can create barriers to entry are first favorable location that is the situation of the berth in the port, the accessibility to inland connection from the yard and for transshipment.

The second, reflects more the advantage of the experience and leader market share which are more profitable because of their low operational cost and can support the acquisition of new technology, the reduction of tariffs and even to withstand a profit reduction period. For example, the draught problems in Hamburg or the transit time and locks in Antwerp are a cost disadvantage for operators and port authorities. On the other hand, Zeebrugge has a cost disadvantage over Rotterdam because even though Zeebrugge is growing very fast it has a lack share compared with Rotterdam.

Government policies is the last barrier and probably the most important barrier of entry into the market. Governments can create regulations that make it difficult for new competitors to enter through the imposition of labor policies and environmental issues. This particular barrier in the EU is not applicable, because its main task is to promote fair competition and give incentives to new players to enter the market¹⁰.

An example for exit barriers in this industry is that if an operator decides to leave the market it can create a destabilization of the local, and perhaps regional, economy. So, the government will try to persuade the operator to stay in the market.

⁹ International Shipper (Nov. 1998). p. 10 - 12

¹⁰ EC "Green Paper" (1997). p. 2 - 5

Although, the entry barriers are significantly important for the analysis of the competition, the exit barriers play a very important role since, if both entry and exit barriers are studied together with industry profit it will be easy to differentiate whether the industry is attractive for competitors.

		Exit Barriers	
		Low	High
Entry Barriers	Low	1 Low, stable return	2 Low, risky return
	High	3 High, stable returns	4 High, risky return

Figure 4. Barriers and profitability (M. Porter 1980)

- **Scenario 1**, when both barriers are low it is practically unexciting.
- **Scenario 2**, is the case when the port is in the process of expansion or privatization because the port authority will give to the operator all the facilities for entry into the market but they will impose certain conditions such as employment conditions.
- **Scenario 3**, here the competition is at a good level and the risk is low, the unsuccessful competitors can leave the market without restriction. Another characteristic is that the market share is quite stable.
- **Scenario 4**, this is the most competitive one because even if unsuccessful competitors face problems they will remain in the market fighting for an increase in their market share.

The identification of barriers can give an idea of the situation as a whole but certainly a more accurate analysis must be carried out for the construction of competitive strategies. Substitution could be made for one of the most important forces in the container terminal industry, mostly in markets like Europe.

2.2.2 Threat of substitution

Senior managers of both terminal and ports know this concept very well. For instance, “The Banana Zone, located between London and Milan, generates more than the half of the European sea-born trade. Moreover, all the ports in the HLHr are

located at only 24 hours from this area”¹¹. So, shippers and shipowners can choose to call any of these ports without almost no geographical advantage over the others.

2.2.3 Bargaining power of customers

Some years ago the port authorities and terminal operators were not worried at all about this concept. However, in 1997 the port of Hamburg was threatened by this concept when Hapag-Lloyds and members of the Grand Alliance announced to the port authority that if they did not dredge the river they would stop calling at this port. Moreover, in the case of the port of Gothenburg the supplier’s power was noted when Maersk asked them to buy post-panamax gantry cranes with the promise to call at this port¹². Finally, both ports made the investment in order to satisfy the demands of their customers which shows that the pressure imposed by liner operators over the ports and terminals is very high and a determinant for competition.

2.2.4 Bargaining power of suppliers

Terminal operators around Europe are aware of the danger that relatively new concepts like transshipment, hub or mother vessels can have on their market shares since, small ports without a hinterland, with no strong harbor history and with a comparatively small investment, are catching big shares in the container industry just like transshipment ports. On the other hand, suppliers can start a court action against the liners that try to leave the terminal and thus break the contract.

2.2.5 Rivalry between competitors

Rivalry is high at the local level but at the regional level it is higher in all ports in the HLHr. At the local level in a few ports, terminal operators are trying to join forces to be attractive, just like Le Havre is doing with their “Port Alliance”. On the other hand, ports like Rotterdam are investing in new facilities for leasing to new terminal operators in order to increase the internal competition, creating as a result, an increase in the quality of services and tariff reduction. All the port authorities,

¹¹ Francou, B. ‘Competition and complementarity in the European ports’ 1998. p. 1 - 8

¹² PDI October 1997. p. 25 - 31

together with private and governmental investors, are trying to develop, expand and attract more hinterland to their ports through Strategic Development Plans. For instance, a recent report points out the rivalry between two German ports, where the Bremen city government is subsidizing a restructuring of BLG. As a consequence some businesses will move from Hamburg to Bremerhaven¹³.

In short, these barriers of entry in this particular area show that competition between terminal operators is extremely high because of the easy access to substitution, the high bargaining power of customers, the high rivalry and the decreasing bargaining power of suppliers. So, the need for competitive strategies is becoming a rule for playing in this market.

2.3 Generic Competitive Strategies

Following the analysis of competitors it is essential to have a clear understanding of the generic competitive strategies that competitors can perform as their company policy or status.

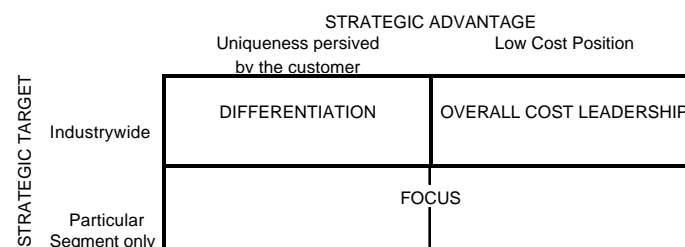


Figure 5. The three Generic Strategies. Source: Porter, M.

2.3.1 Overall cost leadership

This strategy requires aggressive construction of efficient-scale facilities, vigorous pursuit of cost reduction from experience, tight cost and overhead control, avoiding of marginal customers accounts, and cost minimization in areas such as research and development, sales force and advertising. Management control and low cost compared to other competitors are key factors for achieving overall cost leadership¹⁴. However, quality of service, safety and other factors must not be forgotten. The

¹³ Fairplay. April 22, 1999. p. 29

main advantage of this strategy is that lower costs protect companies against the bargaining power of customers. They can take advantage of economy of scale and the lower cost gives a certain security against the threat of substitutes. On the other hand, this strategy has some disadvantages such as, incapacity to invest in state of the art equipment, low marketing and research and development, and difficulties to react to high inflation rate.

2.3.2 Differentiation

The basic point of this strategy is to create something unique that will establish a clear difference with other competitors. It can be achieved through customer service, technology, prestige, quality, etc. Obviously this strategy does not ignore cost but it is a secondary factor. Also, differentiation creates a great positioning in the market opening a big difference between their competitors, creates a customer loyalty and lower sensitivity to price, and in the same way it creates a defense against threats of substitutes. But, the main disadvantages are the actual necessity of customers to sacrifice loyalty by low cost, the imitation of other competitors, which is a fact in a mature industry, and the reduced distance between competitors due to the globalization process¹⁵.

2.3.3 Focus

Focus is a relatively new strategy in the port industry that can be exemplified by the action of create niches or to serve a specific shipping line or a group of them. The main advantages are that through specialization the level of improvements in this particular traffic is bigger, the operating cost can be minimized, they will have a certain number of captive customers and they can have better operational planning. However, this strategy can suffer if loyalty is not assured and can be threatened by seasonal fluctuations or and other competitors specializing in this market¹⁶.

¹⁴ UNTACD 'Strategic Port Pricing' April 1999. p. 16 - 18

¹⁵ UNCTAD 'Strategic Port Pricing' April 1999. p. 16 - 18

¹⁶ Porter, M. 'Competitive Strategy' 1980. p. 38 - 39

In short, during a competitor analysis the company must first of all identify its own generic strategy and the generic strategies of its competitors. They must be treated in different way according to their strategy. The next step is to analyze the competitors in order to understand their behavior and anticipate their moves.

2.4 Analysis of competitors

Although competition in the container terminals industry is very high, the attention to have a system for competitor analysis is not in practice at all. To assume what the competitors are doing? Or what will they do? Can be done through the research and a study of their future goals, current strategy, assumptions and capabilities.

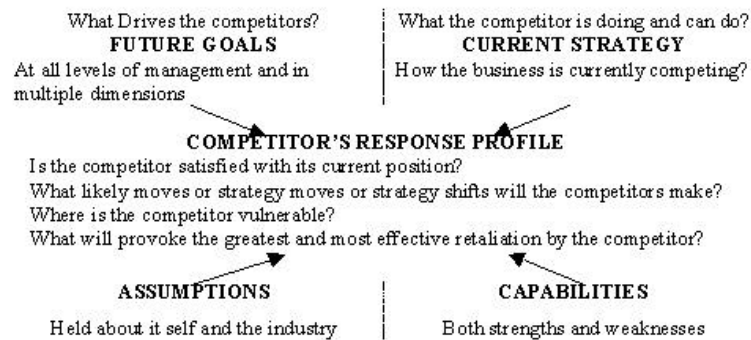


Figure 6. Components of competitors analysis (M. Porter 1980)

Actually it can be seen that most of the players in every industry are aware of the current strategies and capabilities. However, few of them are putting attention to future goals and assumptions that can be more important for the analysis of competitors.

2.5 Port Industry Signals

Competition in the container terminal industry is influenced as are all markets by the actions of competitors that announce their intentions or goals. These actions are market signals that can be truthfully done by competitors in order to announce their real intentions or projects or can be bluffs that are real intentions to create a little instability or to test the retaliation capability of other players. Whether moves are in one direction or in the other is very important for competitive analysis to understand and be aware of the impact that such moves can have on the industry.

Prior announcement of moves are those made before their realization that will reflect the intention of the competitor to initiate a new strategy even though this action remains on paper. Prior announcements could be those that are trying to catch the attention of other local competitors in order to create a new competitive environment in the region. For instance, “Now Bremerhaven is in the process to guaranteeing 14m of water depth under chart datum in the navigational channel”¹⁷.

Other kinds of announcements can be those that are the result or actions after the fact, public discussion of the industry by competitors, competitors discussion and explanation of their own moves, competitors’ tactics relative to what they could have done, manner in which strategic changes are initially implemented¹⁸.

In short, the knowledge and interpretation of these signals are a powerful tool for managers because they will develop a very good feeling about the industry and the way of playing of their competitors. However, if they put too much attention on these signals it can cause a distraction and can damage the development of their goals.

2.6 Competitive Moves

Competition in the port industry is particular. It has their own patterns, its own behavior because their differences such as funding, management and labor. So, competitive moves can be addressed to satisfy the demand, create demand, position in the market or other motives.

2.6.1 Types of competitive moves

Following the same approach can differentiate these moves into three main types, which at the same time can interact between them, be the consequence or result. Firstly cooperative or nonthreatening moves are those that do not attempt against other competitors but the contrarily, these moves have as main goal to increase or

¹⁷ Schiffer, E. (BLG), ‘Containerization International 1998’. p. 45

¹⁸ Porter, M. ‘Competitive Strategy’ 1980. p. 80 - 82

improve the position of a particular company. However, these moves bring indirect benefits to the local community and sometimes also to the region. They can also be categorized into three categories¹⁹:

- Such moves that improve the company position and at the same time the position of competitors. This is the case when a particular container terminal makes pressures its respective Port Authority to dredge the entrance in order to receive bigger vessels. These moves will improve the terminal competitiveness and at the same time the whole port community will benefit from this proposal.
- Other types of moves are those that improve the company position and have an impact only on some competitors. For instance, when a specific company promotes the arrival of post-panamax vessels it will cause competitors to take it into consideration but the ones in barge business will not.
- The third ones are those that only have improvements in the company such as, offer a better productivity or new information systems for its customers.

2.6.2 Threatening moves

In a competitive environment the more common strategies are full of moves that have the purpose to improve the position and share of a particular company through diminishing that of the competitors. The problem that can rise from this move is the retaliation of competitors. Such retaliation can be weak, so the move will have more probabilities to succeed, or can be strong so that it will make it difficult to reach its goals. The level of retaliation depends mainly on the type of management, finance capability and company goals. These threatening moves will have as a consequence the appearance of defensive moves that can be projected in the short or long term.

2.6.3 Defensive moves

Companies in certain stages have to defend themselves against moves made by their competitors; the port industry is not an exception. Defensive moves are related to retaliation but can be differentiated by way of action, timing and purpose.

¹⁹ Porter, M. 'Competitive Strategy' 1980. p. 91 - 100

Depending on the company policy in terms of competition, they have, as a rule, to respond to each competitive move made by competitors in order to let them know that if they are making something to improve their position as for sure a defensive move will begin.

In brief, the framework for analysis of competitors is a key issue to assure a successful competitive strategy. The forces that drive the competition establish the level and the environment where the industry is competing, so is important to know and understand in order to find the way to fight and take advantage of the forces.

Moreover, this framework proposes that it is necessary to pigeonhole each competitor into the three generic competitive strategies: overall cost leadership, differentiation or focus, which describes the characteristics, the approach and goals of each competitor. Furthermore, the identification of market signals and competitive moves, which are essential for this analysis, are based on recognizing when a competitive strategy must begin and how to behave in a specific industry.

Finally, success in the port industry like any other business, is not only a matter of luck or is just covering the customer's needs. It is in the strict sense a matter of planning, project, research, innovation and the developing of strategies. Especially in a highly competitive environment such as the container terminal industry, the need for a competitors intelligence system, systems for analysis of competitors and techniques for strategy formulation, are essential needs to assure the market position.

The next chapter is an introduction to the environment where the terminal competition is taking place, as well as how this economic area has been evolving from the political and economic perspectives. Furthermore, it copes with the different policies that have arisen to promote, regulate and assure the port competition at the local, regional and international level.

CHAPTER 3

3 THE IMPORTANCE OF PORTS IN THE EUROPEAN UNION

The main objective of this chapter is to draw a clear picture of the importance of the port industry in the EU and the measures taken by the EC in order to improve and promote port competition. In the first place, the EU integration process will be mentioned as an introduction to the environment followed by the Intra and Extra EU trade analysis where the importance of this market is pointed out as well as the countries where the major trade is generated. Next, the importance of ports in the European context has been analyzed through the study of the different management characteristics and the difficulties to develop an EPP, and the measures taken by the EC to improve the competition in this industry. Finally, the Green Paper as a measure to improve competitiveness is mentioned and its main points analyzed.

3.1 The European Union (EU)

The relatively new EU, which is formed by 15 sovereign countries, has an area of about 3,240,000 sq. km. where 373,220 inhabitants in 1996¹ with a growth population rate of 0.3% from 95-96. The beginning of the process was the ECSC treaty signed in 1951 between Belgium, France, Germany, Italy, Luxembourg, and the Netherlands. The Treaty of Rome followed in 1957, which enlarged the union to all economic activities. After, Denmark, Ireland, and the United Kingdom joined to the union in 1972. The accession of Greece was signed in 1979 and for Spain and Portugal in 1986².

The EU was set as the European supranational organization dedicated to increasing economic integration and strengthening cooperation among its member states. The EU

¹ OECD <http://www.OECD.org>. 1998

² Fontaine, P. 'Europe in ten points', 1995. p. 4 - 6

was set up on November 1, 1993, when the “Maastricht Treaty”, was ratified by the actual 12 members of the EC. In 1994 the Austria, Finland, and Sweden were admitted to the EU. The Court of Justice serves as the final arbiter in legal matters or disputes among EU institutions or between EU institutions and member states³.

Most recently in 1997 other countries sought EU membership including Turkey, Cyprus, Malta, Switzerland, Latvia, Estonia, Lithuania, Bulgaria, Czech Republic, Hungary, Poland, Romania, and Slovakia. Other potential EU applicants include members of the EFTA. In 1991 the EC and EFTA completed an agreement to establish the EEA, which provides a single market for goods, services, and capital. Indeed, the integration process has been carried out with the purpose of creating a single market in the sense that competition must be exploited by the quality of products and services rather than currency differences, protectionism or monopolies⁴.

3.2 Economic growth of the E U in the International Framework

The objective of this subchapter is to point out the importance of this economy and the implications that this growth has in the international and regional trade, and as a result in the increase of cargo handled in ports, mainly containers. The economy of the EU is growing and becoming more important, as well as the trade with other important economies. Table 2 compares the development Europe with the main economies in the world.

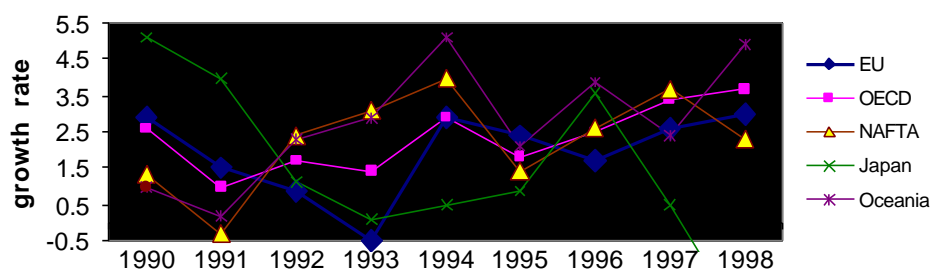


Table 2. Comparison of GDP growth rate. *Source:* EUROESTAT

³ Fontaine, P. ‘Europe in ten points’, 1995. p. 6 - 11

⁴ Fontaine, P. ‘Europe in ten points’, 1995. p. 42 - 46

The EU rise in growth rates has been positive since 1993 when the EU got the lowest growth rate -0.5 . However, 1995 was characterized by a drop in growth rate, the EU achieved the major rate of 2.4 in this period which was followed by 2.6 in 1997 and 3.0 (estimated from the first three quarters) in 1998. On the other hand, if a comparison is made with the two major countries, Japan and USA, in terms of value the result will show the economic capacity of the EU.

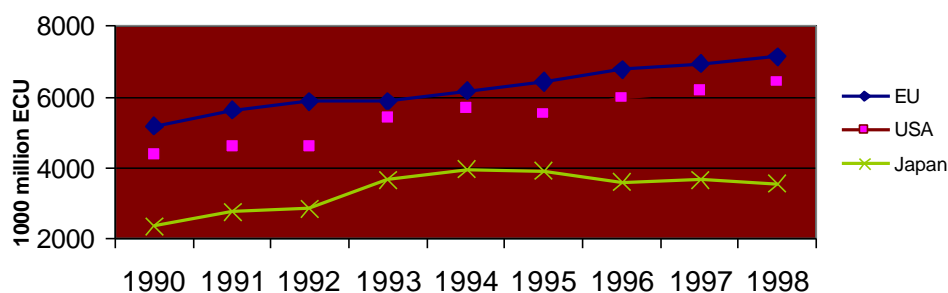


Table 3. Comparison of GDP market prices. *Source:* EUROESTAT

Table 3 shows the trend of GDP in these countries and its positive development until 1998. However, the question now is, which member states of the EU are the ones providing or supporting the value terms and percentages of GDP?

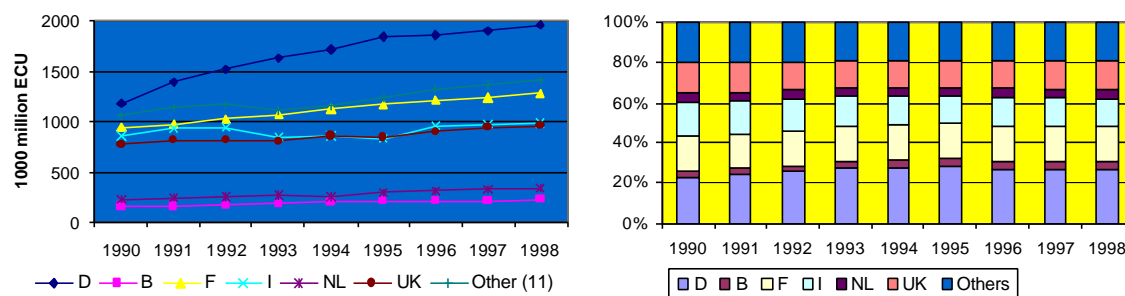
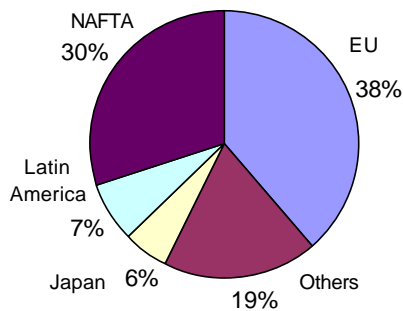


Table 4. Participation in GDP by Member State. *Source:* EUROSTAT

Germany is by far the main contributor to the EU; its contribution has been 22.8% of the total since 1990 to 27.3% in 1998. Other main contributors are France 17.9%, Italy 14.8% and the UK 13.5% in 1998. It also reflects the level of industrialization and as a result the amount of cargo moving from/to these countries, as is analyzed later.

3.2.1 External and Internal trade of the EU

Although, the above tables give a good idea of the economic stability of the EU, the purpose of this paper is to have a look into the international and regional trade which have a direct impact on ports competing to catch the cargo flow generated by intra/extra EU. The tables below analyze the importance of the EU in world trade.



	IMPO % change			EXPO % change		
	90/97	1996	1997	90/97	1996	1997
World	7	5	3	7	4	3
EU	5.0	5.0	7.5	6.0	5.5	9.5
NAFTA	8.0	5.5	13.5	7.5	6.5	11.0
Latin A	13.0	11.5	21.0	9.0	11.0	11.5
Japan	5.5	2.5	2.5	2.5	-0.5	9.5

Table 5. Trade participation in the world. **Table 6.** Growth in trade in volume.
(Source: WTO)

The EU produced in 1997 38% of merchandised trade in value; export activities total value was USD 825.6 billion 19.7% (rank 1) and import USD 787.0 billion 18.1% (rank 2). The major partners in the total trade (Impo-Expo) as is shown in table below were: NAFTA, EFTA and DAE.

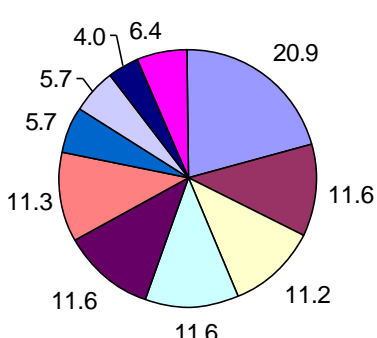


Table 7. EU exports 1997.

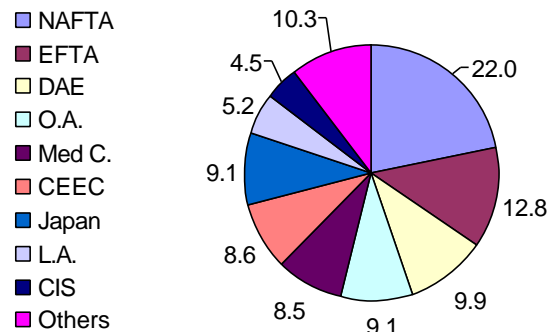


Table 8. EU imports 1997.

Tables 7 and 8 are very important since the main purpose of this paper is to analyze the importance of ports in the economy and to point out the huge market that can be achieved by the port authorities or operators and from which the competition is rising.

From the main partners NAFTA, DAE, OA, MC, Japan and LA are the most important because they create seaborne trade and cargo traffic from/to European ports. Next, the table below shows the participation by EU Member States in Extra-EU trade.

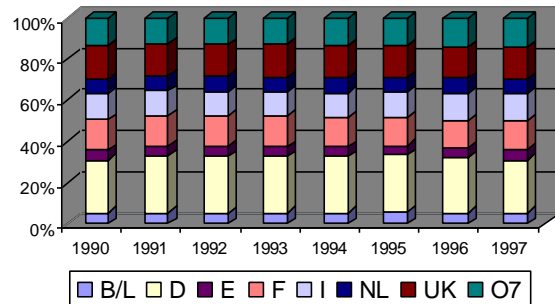
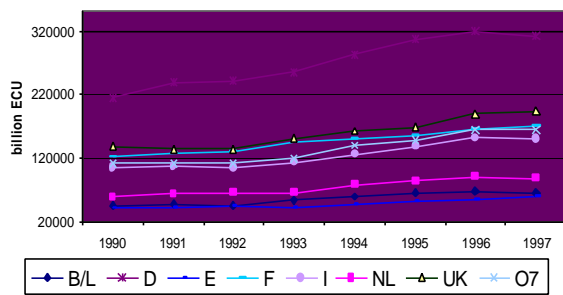


Table 9. Extra-EU trade by State. Eurostat. **Table 10.** Participation in Extra-EU trade.

Such participation is important because it points out the area where traffic is generated, competition for its distribution is taking place and port authorities are targeting its strategies. The tables show clearly the great importance of countries like Germany, UK, France Italy and Benelux countries that from 1990 to 1997 contributed to the Extra-EU trade 82%. Also, Intra-EU trade plays a decisive role in ports throughput.

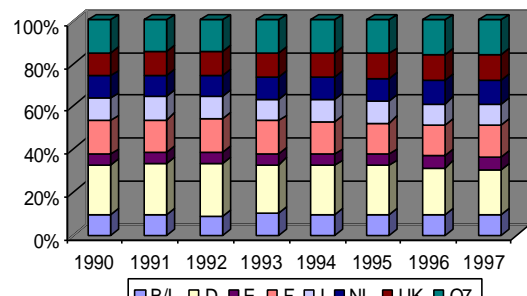
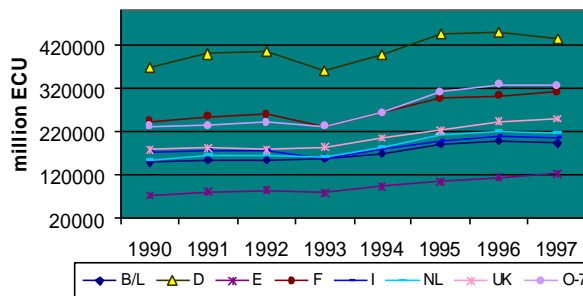


Table 11. Intra-EU trade in value.
(Source: Eurostat)

Table 12. State participation in Intra-EU.
(Source: Eurostat)

The intra-EU trade has in Germany as the main trader with 26% participation followed by France and the Benelux countries. It contributes to point out the importance of this region. Furthermore, the combination of both Intra and Extra trade by Member State and its participation points out the importance of ports in this region for assuring the distribution of the merchandises for the intra and extra EU trade.

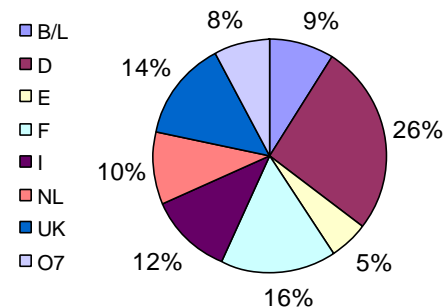
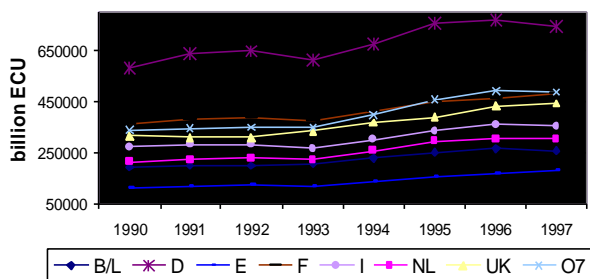


Table 13. Total EU trade participation by State. **Table 14.** Participation in value 90-97

Indeed, the total EU trade value of merchandise was 3,266 billion ECU in 1997, of which more than 80% of this trade is concentrated in Germany, France, UK, Italy and Benelux countries. Ports in this region must be aware of the potentiality of the cargo flow available from this trade. Furthermore, as maritime transport becomes a principal means through different modalities such as, SSS, inland waterways and transshipment, the EC is taking measures for the creation of tools to assure fair port competition.

3.3 European Port Policy

Transport is becoming an integral part of the production process because globalization, ports and maritime sectors are key factors in the logistic concepts. For instance, in Europe the port sector handles more than 90% of the total Extra-EU trade and approximately 30% of the Intra-EU trade.

Thus, the EC had realized that a cost effective, reliable and competitive port system is the strategic importance to achieve competitive trade liberalization. Moreover, in order to assure that the role of the ports contribute to the success of these principles, the EC is trying to create the EPP. This policy has as a main objective to promote the standardization of the way to manage port finance, competition and mainly to improve the state of the ports industry⁵.

⁵ Pallis, A. "Towards a common port policy" 1997. p. 1

3.3.1 The four axes of the EU Port Policy

The EU proposal can be condensed into four main axes. First, improvement and modernization of ports' infrastructure and their inclusion in the Trans-European transport network. Next, creation of a competitive playing field. Then, advance of research and development (R&D) for ports, and four, support of setting up an enhanced dialogue between all partners, to address relevant problems. The axes are represented in the figure below.

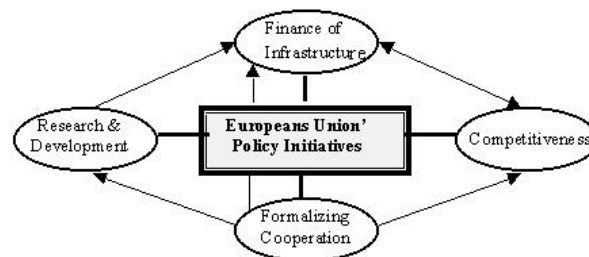


Figure 7. EU Port Policy axes. Source MARIT. POL. MGMT. (1998)

The most successful of the axes is R&D, where the EU has worked extensively. Its main projects are the optimization in procedures of berthing/unberthing and loading/discharging, and development of port equipment and IT. In other words, R&D is trying to reduce turn around times and improve logistic systems. Formalizing cooperation is the axe where port authorities, port users and service providers have agreed to set a panel such as ESPO where they can discuss problems related to port activities. Furthermore, the regional level panel also provide experts who will identify problems and proposing solutions.

Finally, in the case of competitiveness and finance of infrastructure its bases are contained in the scope of the “Green Paper” which is discussed below. However, one of the first difficulties that the EU is facing in order to establish the EPP is the port difference in size, geographical location, management, operation and employment.

3.4 European Ports Overview

The first problem faced in the analysis of container ports and terminals competition in Europe is the differences that these ports have in management, size, geographical location, operation and employment. Despite these differences, in Europe four of the ten biggest ports in the world are located, so the competition in this region is very hard.

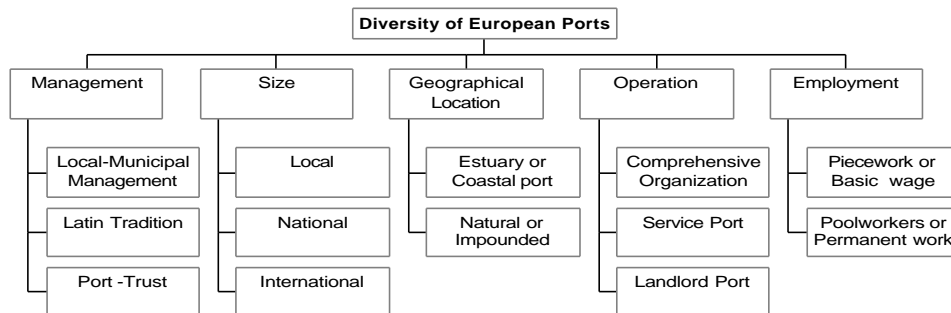


Figure 8. Diversity of European Ports. Source: MARIT. POL. MGMT. (1998)

Figure 7 shows the main differences between European ports which, is the result of the different cultures and ways of thinking. However, for the purpose of this paper, where the objective is to analyze the container port competition in the HLHr, there are fewer differences between these port administrations.

3.4.1 Similarities and differences in the Hamburg-Le Havre range.

The HLHr as a market to be studied, must involve comparing and analyzing their main similarities and differences. Although there are certain similarities that can be helpful for the establishment of a good competitive environment, analyzing and comparing ports and terminals in like to like terms, there are differences that can be a factor to distort competition and threaten this analysis. The aim of this paper is to examine these factors.

First of all, the three *management* theories are a similarity between most of the port matters of study in this paper. First, the Hanseatic tradition of local or municipal management can be found in the ports of Hamburg, Bremerhaven, Rotterdam, Antwerp, and Zeebrugge. The Latin tradition, characterized by the undeniable influence of central

government, can be found in Le Havre Port. The relevance of this difference is that in the first one the management is done by a completely autonomous body with a pure commercial objective creating internal competition and a customer oriented vision. However, in the second the management is done by the Port Authority, which is part of the central government creating a source of monopoly and employment base oriented. So, the competition can be distorted when two ports with difference management traditions are to be compared. However, Le Havre is starting to change their management, looking to increase their competitiveness locally and internationally.

Next, the *size* of the port can be local, national or international. There is a very important similarity between these ports because all of them are international; they are serving the same big hinterland and are the gate to Europe including Scandinavia, the Baltic States and some Arabic countries. All ports in this range receive cargo from all over the world and serve, more or less the same hinterland.

Finally, *employment* is a important factor because in Europe two dock labor practices can be found, piecework or basic wage and pool worker or permanent employment. There is a similarity between these ports because all of them are working in terms of pool worker or permanent employment. They have chosen this practice because they realize that is better in the long run to have very well trained and skilled people even if they are more expensive in the short run.

On the other hand, the main differences that can be found are the way to operate and geographical location. First, in Europe there are three ways to *operate* ports; landlord, service and tool. Only one of the ports subject to study is a formal service port the rest are working in the modality of landlord port. This difference is one of the more controversial topics to study when competition is discussed because the sources of finance projects, mainly superstructure, are quite different and polemic.

Basically, landlord ports do not invest in superstructure but service ports do. However, recent events are changing this concept, for instance the port of Rotterdam has been for years a very well established landlord port. Nevertheless, Royal Nedlloyds, Internatio Muller, Royal Pakhoed and NS Group, invited at the end of 1998 to HPH to participate in a consortium of new owners for ECT. This action threatened the European pride so the final news is that HPH will allocate only 50% of the shares, the Port of Rotterdam will keep 30% and the rest 20% other local investors⁶. In short, the participation of the Landlord on superstructure investment is a new way of management.

Finally, *geographical location*. In other words, if the port is estuary or coastal, a natural harbor or impounded dock system. This factor carries one of the main differences between ports because it gives a comparative advantage in terms of maneuvering time to ports like Rotterdam, Zeebrugge and Le Havre. It is a disadvantage to ports like Hamburg, Bremhaven and Antwerp where the maneuvering time is higher because they are relatively far from sea. Moreover, Antwerp has locks at the entrance, thus in order to increase competitiveness, they are developing container terminals out of the lock side.

Port	Management	Size	Employment	Operation	Location
Hamburg	Hanseatic	International	Permanent	Landlord	River
Bremerhaven	Hanseatic	International	Permanent	Landlord	River
Rotterdam	Hanseatic	International	Permanent	Landlord	Coastal
Antwerp	Hanseatic	International	Permanent	Landlord	River (locks)
Zeebrugge	Hanseatic	International	Permanent	Landlord	Coastal
Le Havre	Latin Tradition	International	Poolworker	Service	Coastal

Figure 9. Similarities and differences in the Hamburg-Le Havre Range.

In short, the similarities and differences together with industrialization, hinterland connections, and environment policies, are the main factors that will be the base of the success of some ports and a threat for others. These diversities are in fact one of motives why the EC has launched the initiative that the EC Law should apply to ports. Through this law, the commission intends to assure fair competition and at the same time improve the quality of this competition in the port sector.

⁶ Containerization International 'Global Players' March 1999. p. 97 - 101

3.5 The EC Competition Law

Many port operators have seen the opportunity to join forces to take advantage of pooled resources, others are applying competitive strategies to protect their position in the market. The EC supports the increase of competition as a catalyst to strengthen the European industry. However, competition must be controlled to ensure the health of the market and mainly the improvement of the level of the players. In this sense, there are two basic rules for competition, which are laid out in the Treaty of Rome.

Article 85:

“Prohibits agreements and activities between two or more enterprises that could lead to a prevention, restriction or distortion of competition affecting trade between member states. This is deemed to be incompatible with the goals of the Common Market. Examples of this are price-fixing and agreements on market shares”⁷.

Article 86:

“Is aimed at the activities of monopolies and other powerful entities and prohibits them from abusing their dominant position in the market. The combination of an already dominant enterprise with another in order to eliminate competition in a particular market in itself could constitute abusive exploitation of dominance. Examples of these types of behavior include the charging of unfair prices (to high or to low) and refusal to sell to a distributor for no objective reasons”⁸.

Under certain circumstances stated in Article 85-3i of the Treaty of Rome the EC is authorized not to apply these rules. These exemptions are, “block exemptions” or “group exemptions” which are those agreements that contribute to improve the distribution of goods and as a result the final consumers gets fair benefits.

⁷ Korah, V. ‘EC Competition Law and Practice’ 1994. p. 58

⁸ Korah, V. ‘EC Competition Law and Practice’ 1994. p. 59

A recent example show how competitors in the port market can, under the umbrella of this new EC Law, complains to assure fair competition. The scenario is the port of Antwerp where Katoen Natie filed complaints before the EC and the Belgium court against the consortium MSC/Hessenatie that won the concession for the construction of a third container terminal in Antwerp. Katoen Natie said that it would bring unfair competition within the port because Hessenatie is already the biggest container operator in the port and MSC is the major container line that calls at the port⁹. However despite the results of the trial the importance is that there is a policy which regulate the competition and where a competitor can based its claims.

The application of the Competition Law (Articles 85, 86), is complementary to the Green Paper where the improvement of port competition, as well as the way to increase the quality of this competition, is also focused in the sources of port finance.

3.6 The Green Paper

Europe's trade competitiveness in the global economy depends in many ways on a cost effective maritime transport system. In this sense, the EU port sector is essential to the economy since they handle 90% of the extra-EU trade. Thus, the “Green Paper” on seaports and maritime infrastructure was simply inevitable. However, this paper, in fact, was the consequence of two main developments that were well under way.

Firstly, in recent years the Commission’s transport policy has increasingly moved from focusing on individual modes of transport to a strategy which emphasizes the need to develop a more balanced and integrated transport system that can provide sustainable mobility in the changing conditions of the next decades. Secondly, the completion of the internal market, as well as the ongoing development of the inland transport networks

⁹ Nigel, T. ‘Lloyds List’ May 5, 1999. p. 2 - 3

across Europe, has significantly intensified competition between ports¹⁰. As a result, ports in different Member States are now competing for the same trade, more than ever before, while an increasing trend of commercialization and participation of the private sector in port operations and investments has become evident in the Union.

This evolution has raised the question of the relevance and the desirability of a more coordinated approach to port development at the European level to properly emphasize the crucial role of ports in the efficiency of the TETN to foster conditions in which ports compete on sound commercial grounds.

The Green Paper covers three big areas which have the aim to develop a set of coherent policies on individual port issues in order to help to maximize the potential of ports and the ports contribution to European and worldwide transport systems¹¹.

- Firstly, the need for various initiatives to improve port efficiency including better procedures, implementation of new technology, and fostering further co-operation in and between ports.
- Secondly, actions to improve infrastructure within and around ports in order to integrate ports into multimodal networks and provide adequate accessibility to peripheral areas.
- Finally, the need to ensure that the Community's responsibilities under the Treaty for providing free and fair competition is being met in the port sector.

The EC considers waterborne transport to be the central effort to promote free movement, competitiveness and "sustainable mobility" both within the EU single market and, more widely, in our relationships with the rest of the world. In this sense, the Green Paper has, as is mentioned above, the need to establish equitable competitive conditions, the so-called "level playing field", between and within European ports.

¹⁰ EC 'Green Paper' 1997. p. 8 - 22

¹¹ EC 'Green Paper' 1997.

The principle of free and fair competition clearly poses particular challenges in the case of the financing and charging of port and maritime infrastructure. Different levels of government and municipal involvement mean that sometimes it is not clear enough whether the cost of investments in port and maritime infrastructure is in practice, passed on to the users through port charges.

Therefore, the Green Paper in considerations of equity suggests that “there might be a case for introducing a community framework to ensure that port infrastructure is priced in such a way that in the future, users bear the real costs of the port services and facilities where their services are being carried out”¹².

In short, the basic principles of the Green Paper is to provide fair competition between and within ports, ensure no discrimination between users and secure transparency of port accounts. However, the issue of distortion of competition should be addressed by the development of a flexible framework for port charging, not by some major and general revision of State Aid rules on infrastructure investment. Another area where fair competition has to be promoted is in port services such as cargo handling, pilotage, towing and mooring, which make essential contributions to port safety and efficiency.

Indeed, the European Union has found that ports are an essential in the logistic transport chain. Furthermore, the EU has realized that extra and intra trade cannot be completely successful without a completely reliable, efficient, economic and competitive port system. So, increased competition between ports and intra port competition through motivation of cooperation, research and development, a policy to regulate port finance as well as to balance the use of subsidies from local, national or cohesion funds is the real milestone.

¹² Port Conference (Barcelona, May 7, 1998)

However, there must be parameters and regulations that clarify the rules of the game, to drive the competitors behavior and make the consumers aware of the measures and regulations in this industry.

This is the case of the HLHr where the competition, as is analyzed in the following chapter, is improving the quality of the services, the efficiency of the operators, the reliability of the ports, and other economic and commercial factors. In addition, shipowners and shippers' requirements are increasing, such requirements are changing the concept of the port itself. Indeed, port authorities and port operators have to start to implement competitive strategies covering the customer's requirements and the new concepts that the market is demanding.

CHAPTER 4

4 CONTAINER COMPETITION IN EUROPE

The importance of containerization in the world is growing very fast because of the different characteristics that help this modality improve and promote world trade. Containerization is straight linked to intermodal transport, both concepts add to international trade reliability, speed and commercial feasibility.

Container terminals are of crucial importance in this phenomenon, because here is the shackle that makes work or fail the logistic chain. Moreover, the efficiency, reliability and economy of this part of the logistic chain brings comparative advantages to shipping lines and shippers who can offer a better service to their customers.

The present chapter analyzes first, the container development in Europe and the size of the container market where the analysis is taking place. Next, the traffic growth and its relation with other macro economic indicators as well as a forecast of the traffic for the next 10 years. Third, a study of competition in the HLHr is carried out using the economic concepts, and the competitive analysis is applied as was described in chapter 2. Finally, the international trends in this industry and the customer requirements are investigated.

4.1 Container Development in Europe

The economic boom of Europe has had a strong repercussion since the beginnings of containerization. Furthermore, the geographical location, the river system that serves the central part of Europe and the state as island of the UK have served as a catalyst to develop the shipping industry. However, with the establishment of commercial agreements with North America and Asian countries, mainly Japan, the traffic by sea has grown very fast in the last decade.

Europe has developed multimodal transport better than any other economic region. Here advantage is being taken of the inland waterway system, the efficient rail system and the high road standards. In addition, Europe is promoting the use of containers as a transport modality to improve its economy.

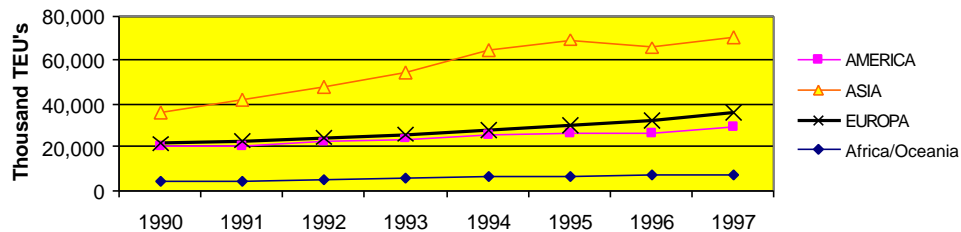


Table 15. World Container Traffic. *Source:* Container International YearBook 1998

Even though containerization is very high in Asia, the increase was only 53% from 1990 to 1997. In the same period North America and Europe achieved a growth higher than the mean, North America 79% and Europe 72%.

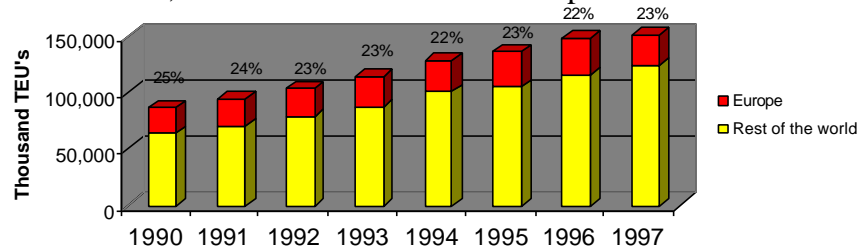
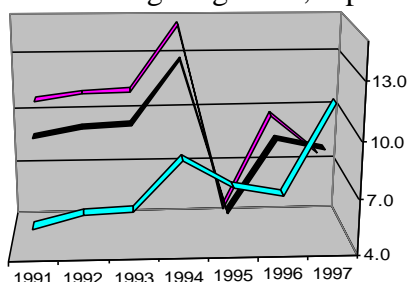


Table 16. Europe in World Container Traffic. *Source:* Container. International

Europe container traffic has been always nearly a quarter of the total traffic. Although, Asian countries are the most developed in containerization, Europe has achieved a higher growth, especially in the last four years, as Table 17 show.



	1991	1992	1993	1994	1995	1996	1997
Europe	5.5	6.1	6.3	8.9	7.5	7.0	11.7
World	9.4	9.9	10.0	13.3	5.2	9.1	8.6
Rest	10.8	11.1	11.2	14.7	4.6	9.8	7.7

Table 17. Container Traffic growth in %. (*Source:* Containerization International)

Containerization in Europe has had a constant growth following the tendency of the world container traffic until 1994. As a result of the Asian crisis the growth had a drop of 8.1 points from 13.3% to 5.2%. However, the drop in containerization in

Europe was only 1.4 points from 8.9% to 7.5% in the same period showing a higher growth than the tendency in the world. Indeed, the competition in the European container market is an interesting subject of study because of the fact that 42% of this traffic is concentrated in the HLHr. The next subchapter analyzes the relation between containerization growth with some economic indicators and project the traffic to ten years in order to realize the size of the market subject to competition.

4.2 Containerization traffic growth and forecasting

There are several economic indicators that can be used to project future container traffic, such as: GDP, population growth, trade in value or in volume. The tables below are calculated with the economic factors that have the best correlation. (Specific details of calculations of forecast figures are provided in Appendix 1). Table 18 shows the development of the container traffic in Europe (dark bars) and the projections built as a combination of GDP and Trade in value (light bars).

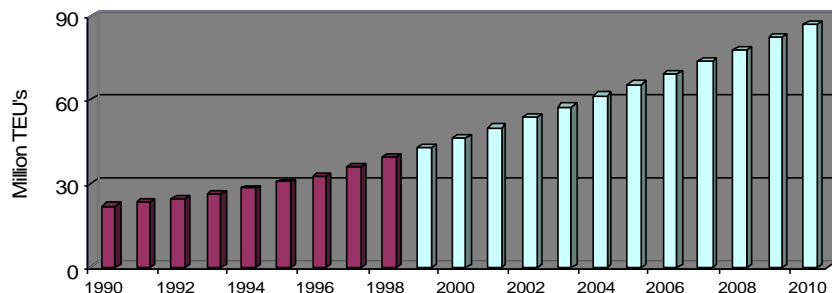


Table 18. Historical and projected throughput for Europe. (Source: Historical Containerization International and Projected Self-Calculation.)

From Table 18 it is possible to conclude that the increase in the market will be very important and will bring more competition to ports in Europe, mainly between the ports in the HLHr. Table 19 is an extract of the previous tables. Here we can see that the growth of the market is very significant and both port authorities and terminal operators must build their competitive strategies taking into consideration the market growth and the shares that they are targeting.

Period	Growth	Year	Throughput (million TEU's)
1995-2000	52%	2000	46.4
2000-2005	41%	2005	65.5
2005-2010	32%	2010	87.0

Table 19. Forecasted growth and throughput.

4.3 The competition in the Hamburg – Le Havre range



This range is very important in the container industry for the big amount of containers handled here; however, it is important to know: which ports are located in such range? why are they so important? and what is the Hamburg-Le Havre participation in the European container market?

Figure 10. Hamburg-Le Havre range

The ports of Hamburg, Bremerhaven, Rotterdam, Antwerp, Zeebrugge and Le Havre form the range, are all located in North Europe near the English Channel and the North Sea. The importance of these ports comes from the hinterland that they are serving and for which they are competing. This hinterland is composed of the industrial zones known as “the banana shape” and Central Europe. These economic regions produce more than three-quarters of the total European sea-born trade¹. The main cities included in these industrial and economic zones are:

- | | | | |
|-------------|---------------|--------------|-------------|
| a) Berlin | e) Leipzig | i) Frankfurt | m) Liens |
| b) London | f) Amsterdam | j) Zurich | n) Vienna |
| c) Brussels | g) Dusseldorf | k) Munich | o) Budapest |
| d) Prague | h) Paris | l) Milan | p) Others |

However, the participation of these ports in the total throughput of Europe is one of the most relevant issues for its consideration. The Table 20 shows the development of container traffic in the range compare with the European traffic and the forecasting of this participation in the next 10 years. Moreover, it is important to mention that in Europe there are more or less 300 ports in total and the HLHr for the purpose of this paper is formed by six ports.

¹ Francou, B. ‘Competition and complementarity in the European ports’ 1998. p. 1 - 8

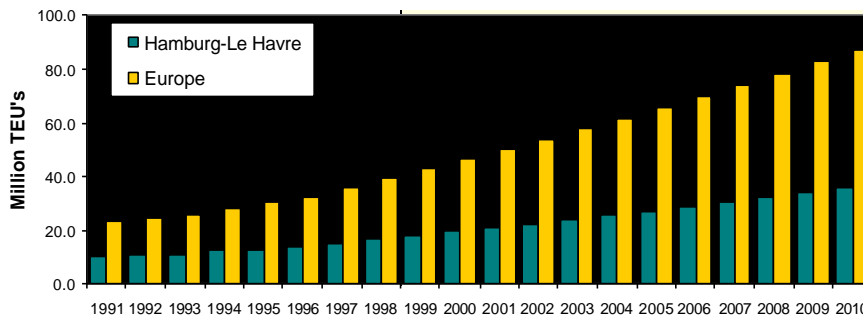


Table 20. Participation of the HLH range in Europe. *Source:* Containerization International (Historical data) and projections (Self-Calculated).

Therefore, in 2005 the participation will be 25.4 million TEU's and in 2010 the projection shows an increase to 33.0 million TEU's. The increase of throughput will bring a fear of competition into the range. Predicting the future is in fact impossible. However, the purpose of this paper is to create a possible scenario where competitive strategy can be built upon. Furthermore, it would be an interesting project to calculate the position of the ports in relation with the traffic in the future.

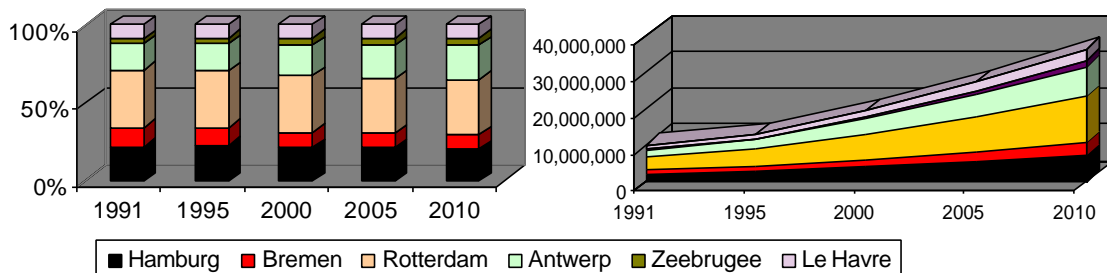


Table 21. Historical and projected port participation in percentage on the Hamburg-Le Havre range.

Table 22. Historical and projected port participation in throughput on the Hamburg-Le Havre range.

The tendency projected, taken as a base over the last ten years, produces as a result that Rotterdam and Antwerp will grow by 6%, based on their transshipments and hinterland capabilities. Although Hamburg has a steady participation in percentage, maybe because of its draft problems, its traffic will have a substantial increase as table 9 shows because of recent developments in port capacity.

On the other hand, Le Havre and Zeebrugge will have a constant percentage of participation in the range despite its smooth increase in traffic. This can be explained as the result of their hinterland interdependence and lack of inland connections.

Finally, Bremerhaven presents a loss of participation in the range but they have a small increase in throughput. Indeed, this participation in percentage and throughput are based on the tendency. The next subchapters will deal with recent developments and the competitor assumptions and capabilities.

4.3.1 Type of port competition in the range

Competitive strategies must be built according the type of market competition. Strategies tend to differ if there is monopoly, oligopoly, monopolistic competition or perfect competition in the sense that the mission, objectives, tasks and market approach will be completely different. The type of competition that is being carried out in the HLHr is graphed in the tables below, as well as projected in following the growth traffic trend.

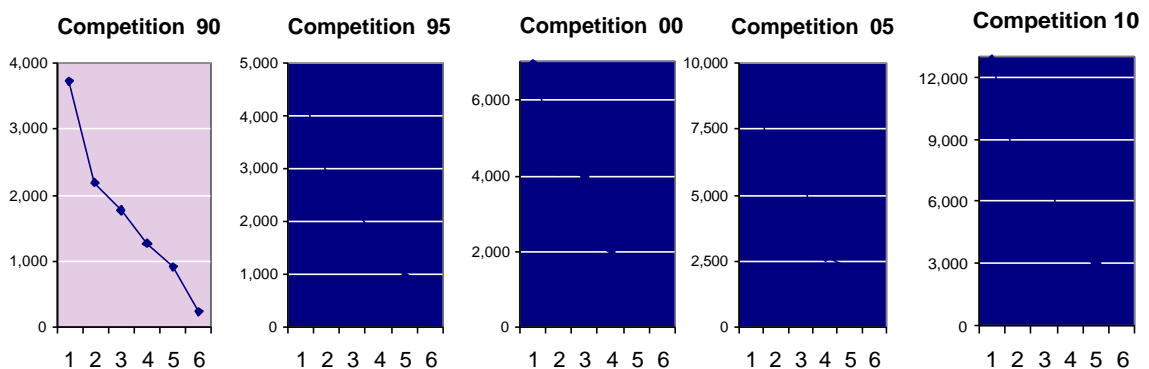


Table 23. Concentration measured by total traffic (TEU's).

The tables above represent the distribution of the total traffic between the six container ports in the range. The “y” axis is the throughput and the “x” axis represents the ports. From these graphs we can conclude that, even though there were few competitors in 1991 two ports had control of 59% of the container traffic, Rotterdam (1) and Hamburg (2). Antwerp (3), Bremen (4) and Le Havre (5) were sharing almost the same percentage except Zeebrugge (6), which only had 2%. So, at that time the market imperfections draw a kind of duopoly.

However, competition in 1995 starts to smoothly change because other competitors start to increase their market participation, getting closer to the second and as a result

the competition rises and 50% of the competitors had 77% of the total traffic. This new market distribution, where Rotterdam, Hamburg and Antwerp have 80% of the total traffic, remains in 1998 and will continue until 2000. After the projected traffic for 2005, Antwerp will overtake Hamburg and the distance will be bigger in favor of Antwerp. Therefore, the market is working in imperfect competition that can fit into the definition of “Oligopolistic Competition” (Chapter 2).

Indeed, to have an idea of the market development and behavior it is as essential to know the type of market competition in which the players are competing. However, the scenario is incomplete if an analysis of strengths and weaknesses of the competitor is not carried out.

4.4 Competitors Analysis

Competitive strategy, as well as strategic planning, must be built according to the strengths of the port or terminal that can be used as comparative advantages in the race to overtake the competition. Moreover, the strategy must take into consideration the weaknesses, which can mean high comparative disadvantages over some competitors but a small disadvantage over others. Indeed, competitive strategy has to develop thinking in the whole market and in the individual competitors.

Therefore, in order to figure out the sources of competitive advantage or disadvantage of different ports in the market subject of the study, this paper suggests the use of seven factors. These seven factors² listed below, are critical for port and terminal customers at the time of choosing port of call.

Location; this factor is related to the geographical location of the ports in relation to main sailing routes and to main industrial zones. So, in this case the distance to sailing routes was measured from the fairway to the breakwater. In the case of distance to industrial zones the average distance to 15 cities was taken (Appendix II) located in the “The Banana Shape” and Central Europe.

² Shuo, M. ‘Port Comparison’ 1999.

Nautical Constraints; for this factor draft, number of pilots and locks are considered. Draft is mainly a constraint on ship maneuverability and speed, and vessels with draught bigger than the lower draft will have to wait in some cases for the tide. Number of pilots used is an economic and nautical constraint because vessels have to reduce speed despite new techniques when pilots are boarding. Locks are important to take into consideration because they consume considerable maneuvering time.

Ship Facilities; here the number of container gantry cranes available (panamax and post-panamax), and the total of dedicated container berth length considered. Both, the number of panamax or post-panamax will determine the size and quantity of vessels that can be served at the same time, as well determine the level of investment needed to retaliate to further competitive moves.

Cargo Services; The main feature taken into consideration for this factor is the total area designated for warehousing where cargo can be stuffed, stripped or processed. The importance of this factor comes from the fact that shippers will prefer to have different logistic alternatives for their cargo flows.

Value Added; this concept points out the contribution of port activities to the value per tonne to the goods handled. The bigger the value added per tonne the more attractive the port is for shippers and cargo owners.

Distribution Cost; this factor is related to the transport cost from the port to the final destination. In this case a study carried out by P&O Nedlloyds was taken as an example. This study reflects the cost of distribution to 8 different cities in North, Central and South Europe.

Port Cost; this item is the result of the combination of ship cost and average container cost. The ship cost per call was made for a model vessel of 4500 TEU's and the port cost includes pilotage, mooring, towage and port dues. The case of the average cost per container was also extracted from P&O Nedlloyds where they combined the ship cost per call and the number of containers deployed in each port.

In fact, there are other factors that can be considered for the analysis of competitors. However, for the purpose of this paper, and taking into consideration the time concern and lack of information available, these seven factors give the best approach for getting the feeling of the market and competitors positions in the competitive scope. Finally, detailed information of the criteria applied in the evaluation of each factor can be found in Appendix II.

“The Flower of competition” combines these seven factors for the container ports in the HLHr, making clear which ports are dominant and in what ways they are strong or weak as well as who are the weaker and where the weaknesses come from. Therefore, the strategist can decide if the strategy will be focused on those factors where the particular port is strong taking it as a comparative advantage and converting it into a “Differentiation”. However, they can decide for been focus on their disadvantages and try to reduce the distance to competitors with strong position in the factors where their port is weak converting the strategy to “Overall Cost”.

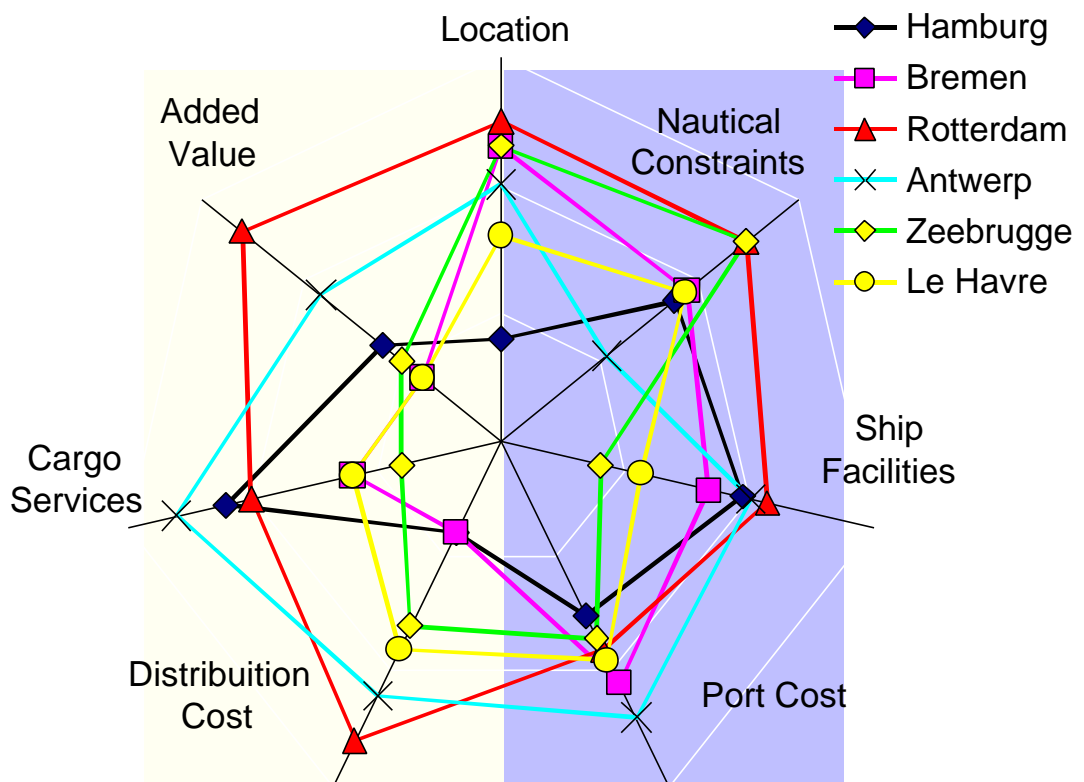


Table 24. “The Flower of Competition” in the Hamburg-Le Havre range.

If the “Flower” is divided into two parts where the “right” part is the factors related to quality of services to ships and the left is related to quality of services to cargo, it is possible to see that the distance between port in each factor is smaller on the right than on the left. Thus, this means that the competition for service to ships is higher than cargo and the tendency in the range is more ship rather than cargo oriented.

The graph shows a clear supremacy in the container market of Rotterdam over the other competitors. Rotterdam gets 8.5 points on average and is the leader in five of the seven factors analyzed. Antwerp is just 1.5 points behind Rotterdam in the total average and has the leadership in the two factors remaining.

On the other hand the ports with the least comparative advantages were Hamburg and Le Havre, getting 4.3 and 4.4 respectively. Although the difference between Hamburg and Le Havre with Zeebrugge and Bremerhaven is not too big, the difference with the two leaders is quite worrying because it can create a kind of duopolistic competition and because, in order to compete with the two leaders, the other four have to invest a lot in technology or other elements as discussed later. This assumption is reinforced by Table 23 and the conclusions drawn from it.

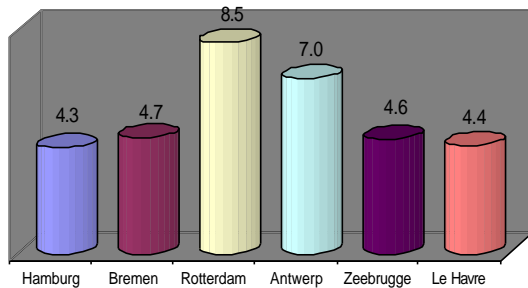


Table 25. Competitive ranking.

Indeed, both tables (10 and 11) give a main conclusion that the tendency of the market is to have only two or three ports as a hub for this region and the reminded will be focused on specific container traffics.

Furthermore, the same analysis can be carried out in each port for the local competition. However, this intra-port study requires a more local assessment in terms of customer loyalty and relationship, marketing tools used and the sales force, and mainly internal agreements or contracts. This market becomes the subject of a more in-depth study which because of the time concern and lack of information available will not be a matter of study in this paper. However, some examples and special situations can be mentioned to clarify certain concepts.

In brief, the use of tools for comparison between ports when a Competitive Strategy is going to be built becomes an indispensable element in the process of analyzing the industry and the competitors. In this sense, the graphic way to compare the competitors proposed above gives a very good feeling of:

- What the industry and competitors are focusing on.
- What the factors are that can be used as comparative advantage, and
- What strategy can be used according to their own mission and expectations.

In addition, other elements need to be investigated to give a more solid base from where to build the strategy. The next sub-chapter deals with the feelings of the players about the competition, the strategies used, the customers' requirements, and the market as a whole. Although, the methodology used in this paper is merely academic, the results are not far away from the reality of the market.

4.5 The Competitors Feelings about the Competition in the Market

Although, the graphical approach is a very good tool when analysis of industries and competitors is done, the feeling of the players about their competitive environment, competitors and about themselves in the market plays a decisive role. However, the interrelation of the elements of the chain makes the analysis stronger. So,

“The stronger the analysis of the industry and market the bigger the certainty of choosing the correct and right competitive strategy will be”.

Based on these facts this paper proposes a research based on a questionnaire that was sent to managers of port authorities, container terminal operators and other people involved in the container business. Moreover, interviews to shippers and shipowners during field trips and conferences are also part of the conclusions presented below.

The Questionnaire on Competition

The research, as stated above, was carried out through a questionnaire, which tries to get information such as the players' point of view about the environment in which they are competing, the level of the competition and the rivalry between competitors

(Appendix III). The questions are divided into four modules mentioned below, which provide the information in detail about the players' point of view:

- Feeling about the competition.
- Factor for competition and customer needs.
- Competitive Strategies used or actually used.
- Assumptions about competitors.

Besides, this questionnaire was sent to the six port authorities and to 15 container operators in the six ports. Although, the reply from port authorities was very good, the container operators reply was only fair because only 40% of them support this research. However, the information collected is quite substantial and gives a very good overview of the competitors' feelings, factors of competition and customers needs, competitive strategies and competitors' assumptions.

4.5.1 Feeling about the competition

The competitors' feelings about the competition in the market in which they are competing is one of the more important indicators to consider when the competition is analyzed. However, they have, most of the time, a different perception of the competition depending on what place they have in the race, their own assumption, capabilities, goals and aspirations. This particular module was assessed using seven questions for the terminal operators' questionnaire and eight for the port authorities.

First of all, the total of the competitors assure that there is competition in the local, regional and even that they experiment certain competition in the international scope. Moreover, the level of the competition was qualified as "Very high" (50%) and "High" (50%) surprisingly the three ports that got the bigger competitive ranking (Table. 25) feel that the competition is high and the other three feel that is very high. The last perception comes from the fact that they have few comparative advantages or because of the pressure imposed in the market by other ports in the range.

Besides the high or very high level of competition most of the competitors express that the quality of it is “Fair” which means that, despite the difference between the best and the least ports, the competitive environment is good.

Next, the competition is more or less clear in the sense that the three leaders are identified by the competitor. All agree that the more competitive port is Rotterdam, 83% point out Antwerp as second and the third place is shared by Hamburg and Bremerhaven. Something that is important to note is that the two bigger ports see in Hamburg a strong competitor in transshipment traffic, mainly in the Baltic Sea.

In addition to these statements all of them think that Rotterdam and Antwerp are satisfied with their position in the market, but that, Hamburg and Bremerhaven are not; so, from them can be expected more aggressive competitive strategies. This does not mean that the other ports will not make competitive moves to attract cargo.

Thirdly, the intra port competition draws a completely different picture than the competition between ports. The feeling about the existence of competition in the market is the same, everybody thinks that there is competition but the level and quality varies in the local market. This is because, just in two ports the level was qualified as “Very High” (Hamburg and Antwerp), the other two ports described the competition as “High” (Rotterdam and Zeebrugge) and the remaining two ports categorized the competition as “Low”. In the case of quality, 66% said that the competition is “Fair” and in Bremerhaven and Antwerp it is qualified as “Imperfect”.

The situation of the level and quality described by the players is by far clearly explained by the fact that the ones who feel a Very High level of competition have each one four operators with more than 250,000 TEUs throughput in 1997. Moreover, the major operator in Hamburg gets only 43% and its equivalent in Antwerp gets 39% of the market, which seems to be fairly balanced.

On the other hand, Rotterdam and Zeebrugge, which describe the level as High have a different picture because in the first there is one operator that gets 70% of the total

traffic. However, there are other operators with more than 250,000 TEUs and the second has only two competitors which really are starting operations and are trying to cooperate to attract cargo to the port.

The level of competition in Bremerhaven and Le Havre is low as they describe because in the both there is only one big private operator and some smaller ones; so, instead of competing they complement each other. These statements are reinforced in Figure 13. Fourthly, the operators' competition in the intra-port scope reflects more or less the same results as in Figure 13. The exemption is that the players in Zeebrugge feel that FCT is more competitive than OCHZ.

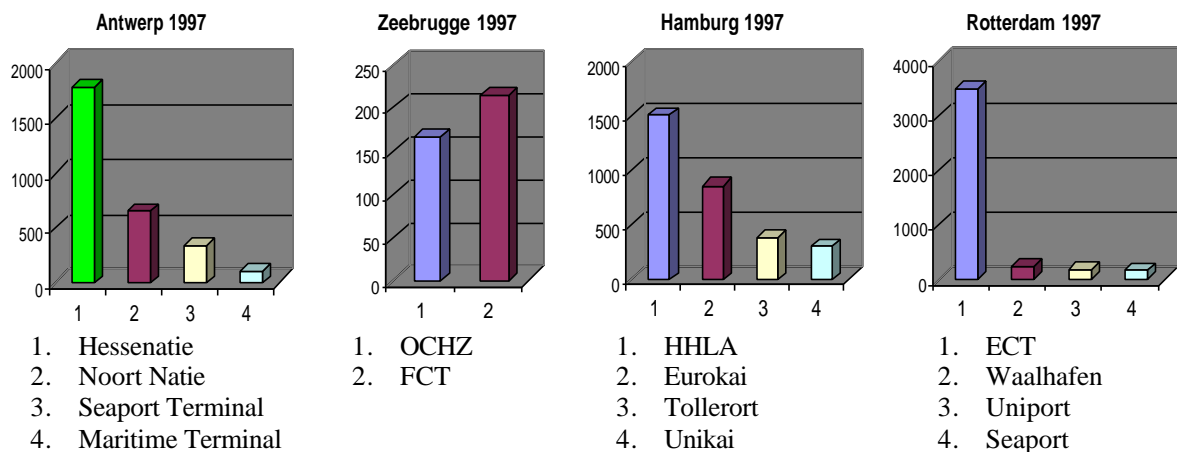


Table 26. Intra Competition (1000 TEUs). *Source:* Containerization International.

Furthermore, in the regional competition all the players agree that ECT is the major container operator in the range, followed by Heesenatie that was in second because 50% awarded it as third place and the other half as second. HHLA and BLG share the third place according to the players.

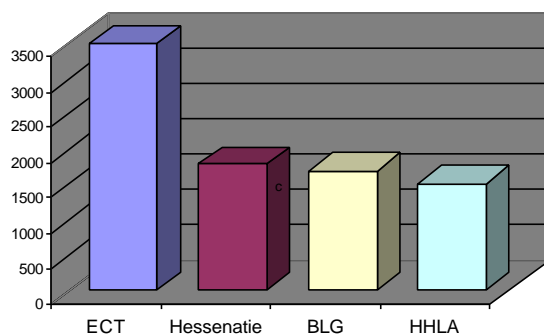


Table 27. Main Container Operators.

The leadership of ECT is in one sense worrying because it can cause a monopolistic competition but, can also be a motivation to the other three operators which, between them, have an almost balanced competition in terms of throughput.

In short, the players' feelings about the competition reveal how the market is working in the day-to-day and how they perceive such competition. Another important matter is that knowing the reality of the market and being objective with the competitors assumptions gives a more realistic situation and achievable goals can be set for the competitive strategy.

4.5.2 Factors for competition and customer requirements

The second module of information is related first to factors that are differentiating competitors, that are creating new competition or moving it in another direction or that are creating comparative advantages or disadvantages. Secondly, to the customers (shippers and shipowners) requirements from the point of view of the suppliers and their thoughts about the customers needs or preferences.

First of all, the competition, as can be extracted from this research, is basically focused on seven factors, which differ from port to port according to their capabilities, circumstances and targets. The factor mentioned most was the "quality of services to ships" which means that operators are more and more interested in reducing time in port, increasing productivity, using as many gangs as possible and, as consequence, reducing the "turn around time".

Following this factor are "quality of services to cargo" and "price" which were mentioned by 66% of the players. Quality of services to cargo is a factor that creates added value to the cargo and also creates a certain close relationship between port operator and shipper because the port creates a substantial participation in the value chain of the goods. Price is the easiest factor for competition to practice; however, it is not a sustainable factor and can give a short comparative advantage.

The next factors mentioned are "transshipment services" and "inland connections" which are part of the same logistic system. The importance of them is especially strategic in Europe because of the geographical configuration and economic development. In fact, "inland connections" is so decisive because it will assure a

better distribution system which means less transit time, more transport options and consequently a lower transport cost.

Last but no means least are “cargo handling technology” and “information technology” which together are successful factors for competition because they increase the level of the customers services. However, it is understandable that this is placed below the other factors because this technology is available for all the players in this market, but at the same time only a few can afford to invest in R&D.

In brief, the competitive factors that are used in this market strengthen the assumption that the industry is in the “transition to maturity” stage; thus, the competition is more focused on the “quality” of the service provided. However, this quality must be:

“Efficiently economic as economically efficient”

The transition to maturity of the industry and the actual development are proposing that the competition in the near future must turn in a new direction.

Next, to compete and succeed in the race is always a challenge. The keys to face this challenge are to know by heart the customer’s reasons to prefer our services rather than our competitors and the reason of the potential clients for staying with our competitors.

In the sense of why they are preferred over other competitors all of them have the same reasons because 100% realize that their customers are happy with their “quality of services” and the “price” paid for these services. Thus, if all are preferred by the same factors there must be an element that creates the differentiation, this is also the reason why the competition in this range is high or very high. The other factor that is making the difference between competitors is “inland connections”. This factor, as discussed before, is important for distribution but most of the competitors claim that their clients are with them because of this factor. Finally, “contract flexibility” can be a good strategy for competitors with a lack of distribution channels.

On the other hand, the answer to the second question was “prestige” 50% and the other half did not answer which is quite sensitive and understandable. Although, they answered “prestige” in their appreciation of the market, this does not reflect the type of customers and their requirements. The customers (shippers and shipowners) are very well informed. They know their bargaining power. Customer loyalty is not based on names or branches but on commercial needs and win-win principles.

In short, the similarity of factors that are making the difference between competitors demonstrates the importance to create competitive strategies and to invest in R&D in order to create an element that can assure customer preference, or at least to add another reason for the customers to stay at home.

The final part of this module asks the competitors, “which are the pillars or the base of their success?” “equipment and facilities” and “price policy” were the elements most commonly used as catalysts for success, which is a consequence of market forces and customer requirements. This is because, operators must have enough equipment and facilities to perform the operations with the level of quality promised, despite the level of the demand. In addition to this, customers are always expecting a simplified, effective and attractive price policy. Moreover, “technology available”, which was the next factor after the above mentioned, is the pillar for 66% of the competitors because of recent ship developments. So, operators need to acquire new cargo handling technology, which can give them a comparative advantage.

On the other hand, there were other pillars mentioned such as “management style”, “labor skills” and “marketing forces”. However, the nature of these elements is not sustainable as they are not too often used as a basis of success they are used as complementary resources.

In brief, competitors must recognize the customer requirements, make a clear analysis of the market forces and recognize their strengths as well as the strengths of their competitors in order to have a clear picture of the competitive environment. Recognizing all these factors it is easier to decide which strategy to follow.

4.5.3 Competitive Strategies and market sensibility

Competitive markets keep the competitors busy trying to realize what are the next moves that the competition will make in order to take some shares from other competitors. This module looks for the market sensibility about the use of competitive strategies.

First, the players in the range are aware that most of the container operators are involved in certain types of competitive strategies, some of whom are trying to attract more traffic and others who are trying to construct a solid base. In port competition all answers are involved in competitive strategy, which is not a surprise because this particular market is well known for its competitive environment.

However, the interesting thing is: what are the particular strategies and what are they focused on? The main strategies in use are “expansion of inland connection capacity”, “expanding equipment and facilities capacity” and “increasing quality of services”. These three are customer-oriented strategies that fit very well into the market needs in the range. But, the first strategy mentioned asks the question of who is paying for this expansion? This can carry some thoughts about whether the investment will increase the competition or will create a market imperfection.

Second, the confidence of the players in the market can be a very important factor that can be the catalyst of new strategies. Although, confidence can create a good image that can be used to attract customers, over confidence can cause an underestimation of competitors or late retaliation moves. 17% of the competitors affirm that in the regional competition “none of them” are prepared to retaliate their competitive moves, 33% affirm that only “few of them” are prepare to retaliate and 50% are aware that if they make a competitive move “most of them” will react and are prepared for that. Logically, the ones who think that the market is not prepared are the leaders. This is because, they are strong enough to invest in R&D, new technology and even to invest in the state of the art technology with financial loses.

On the other hand, all of them assure that they are prepared to retaliate the strategic moves of the other competitors in the market.

Finally, the totality of the players assumes that anyone is capable to initiate a competitive strategy, which can be addressed in four main aspects. “Price” is the most expected strategy because 83% of the players feel that any competitor can restructure their price policy to attract the attention of customers. This strategy seems to be the most common and easiest way to initiate a move. Contrary to this 66% think that the strategy can be based in the introduction of new “cargo handling technology” which requires as high investment as risk involved.

The other two strategies that they can expect to take place are “quality of services” and “transshipment services”. The first one has the main aim to secure the preference of the actual customers and at the same time to attract some traffic. The second one can be to target a different kind of traffic or to increase the actual traffic. This strategy is more complicated but has very high pay off as risk involved. However, most of the ports in the range are highly interested to become a hub port.

In short, competitive strategies are a good tool for succeeding in the market, however, first of all it is necessary to know the retaliation capacity of the competitors as well as what kind of move they will initiate. The knowledge of these features will avoid over investment and loss of shares.

4.5.4 Competitors assumptions and capabilities

The last module of questions makes reference to the assumptions that the players make about their competitors when they are developing any strategy that will affect the stability of the market. The first part reviews the past experiences about how the competitors had reacted to competitive moves. In this sense all agree that their competitors react “rationally” to the moves, but this reaction is 50% quickly and 50% slowly. Rationality of reaction gives to the market the need for very well planned moves or strategies. The speed of reaction is not as important as the reaction itself.

Next, the assumptions of what the attitudes are that drive the goals of the competitors and what is the overall importance of the container business for their whole organization gives another view of how the competitors will react to any event that threatens their organization.

The attitudes are “profitability” for 50% of the competitors, which is according to the importance stated below. “Market position” is the attitude of 33% and the rest “added value”. This is mainly due to the fact that ports looking for “market position” are the newest players and the ports that go for “added value” are using this business to support their logistic chain. The overall importance for 50% of the players assumes that this industry is their “core business” so this part of the market is very sensitive to changes and puts more attention on to the market. The other 50% assume that the industry is treated as “part of the logistic services” and as an instrument to produce “added value”. This suggests that they are not more competitive than the first ones; however, they can be more effective because they do not depend totally of this industry; so, they will be less emotional when they need to act or react to competitive moves.

Finally, the last part of this module tries to find out the players’ assumption about the vulnerability, adaptability and impact of exogenous events on their competitors. The vulnerability expressed by the players about their competitors varies and includes location, price, physical constrains, quality of services, information technology, inland connections, cargo handling technology, and storage facilities. This assumption has its origin in their strengths and the competitors’ weaknesses.

The assumptions of players about the adaptability of their competitors to different factors is a good indicator that can drive the strategy. They assume that only 33% are not capable to compete in “cost”, “adding new equipment” and “adding new services”. If the assumptions are in that sense a strategy with these characteristics will have few chances to succeed. On the other hand, the assumption is that only 33% are capable to compete in “introduction of new technology” and “competing in

services”. Competing in these functional areas is very risky and requires huge investments that few players can afford.

The impact of exogenous events on the market can affect some competitor capabilities. However, the assumption of the players of the impact of events such as; a sustained rate of inflation, technological changes that make the existing cargo handling equipment obsolete, increase in wage rates or new governmental reforms that will affect this industry, is that all the competitors are capable of handling them.

In the end, assuming what will be the reaction of competitors to different scenarios is a good exercise. However, it must be rationally created and as real as possible because wrong assumptions can cost millions. The research tries to draw a picture of the scenario of the players’ assumptions of the market, competitors and themselves.

4.6 Impact of the International Containerization Trend

Container operators have to be aware of the tendencies in the global market. Concepts like vertical or horizontal integration, network or hub ports are totally changing the environment and mainly the state of competition. However, the main factor that is revolutionizing the market is the new technology used on ships trying to get the best possible advantage of economies of scale.

This technology will leave some ports out of competition because the new generation of vessels like “Regina Maersk” and “Southampton Class”, described in Figure 11, require deeper channels, bigger and faster gantry cranes with an outreach of at least 18 containers, stronger quays and higher logistics standards supported by IT and qualified personnel.



Figure 11. New generation of container vessels.

Furthermore, shipping companies are actually talking about container vessel capacity of 8000 TEU's and for the North Sea Terminal (Bremerhaven) under construction the tenders are planning to construct gantry cranes for handling vessels 22 boxes wide³. Therefore, these developments suggest that in the very near future there will be only a few ports that will handle these vessels and these will be the hub ports for very large regions. These ports must comply at least with five characteristics⁴:

- Must ensure a draft at least of 18m. without tide restrictions.
- Must be in the border of the main trade routes with the shortest maneuvering time
- Must deploy efficient, reliable and adequate handling equipment with and storage capacity avoiding any idle time or queue
- Must have reliable inland transport with sufficient capacity to transport the container in/out with an adequate IT.
- Must have a high hinterland with centers of production and consumption to generate substantial local traffic to provide captive capacity.

Indeed, “few big vessels with 8,000 or 10,000 or more will call at few hub ports with the characteristics mentioned above”⁵ is the tendency for the near future. Although, these factors have to be taken into consideration for the creation of competitive strategies, there are still some factors that must have further priority such as the customer requirements.

4.7 Customers Requirements for European Ports

The main requirements from shipowners and shippers are close related to the characteristics of hub ports but from a different perspective. From this perspective, seven main requirements from shipowners for choosing port of call can be identified⁶.

³ Fairplay (April 22, 1999). p. 29

⁴ Framcou, B. 'Competition and complementarity in the European ports' 1998.

⁵ Shuo, M. Lectures 'Strategic Port Planning; WMU, 1999.

⁶ Lodder, O. lecture 'How to select a port' Rotterdam, 1999

- a) Commercial viability. The port itself must have the characteristic to have the economic capacity to generate cargo flow to use the vessel capacity.
- b) Nautical approach. No draft restrictions, easy accessibility, no locks, short transit time from sea to berth.
- c) Inland connections. Distribution channels well designed with no congestion and accessibility to other transport means such as rail, road, inland waterways or air.
- d) Shortsea Feeder connections. The port has to ensure the logistic distribution in terms of frequency, volumes of traffic and feeder coordination.
- e) Hub facilities. Transshipment between various main lines, over berth, storage and equipment capacity.
- f) Operational performance. High productivity is important but Turn Around Time is the most important factor for shipowners. This involves a precise coordination between traffic control, pilots, tugs, mooring and stevedores. Moreover, port and terminal facilities, authorities flexibility, EDI, labor skills and social climate are part of the total performance.
- g) Port and terminal charges. The tariff system must be clear and simple with reasonable tariffs and integrated bills.

In brief, having clear what are the tendencies of the industry and what are the customers demanding, the construction of competitive strategies is more realistic and will be the basis for planning and developing. Indeed, container traffic in Europe is very important for the world because it represents 25% of total traffic since 1990.

The growth has been 8.6% in the last five years and was the major growth in the world. This tendency projected in relation to GDP and trade in value gives an impressive traffic growth of 120% for 2010. The HLHr growth projected with the same trend, and taking into consideration that the participation is the same, gives an increase to 36.2 million TEU's for the same year. So, the competition in the range will undoubtedly increase, whatever the factors or the type the competition takes.

However, the state of competition for this traffic will be “Oligopolistic Competition” because the analysis projected for the next ten years suggests that 50% of the competitors will have 70% of the total traffic in the range. Furthermore, the “flower of competition” shows that the leader of the competition is also the best in five of the seven factors analyzed, which then supports the tendency mentioned above. Antwerp is the number two close to Rotterdam, the rest are very close to each other which makes the market more competitive. In addition, the flower suggests that the competition is higher in services to ships because the distance between competitors in the factors related to these segments is very small. This assumption means that the competitors have as a main target the shipowners or shipping lines.

The “questionnaire on competition” reflects a market where competitors are aware of the competitive environment and also reflects that the main factors for competition are services for ship and transshipment services are their main tasks. The market in the range according to players assumptions is in “transition to maturity”, explaining that the players think that customers demand first quality and second price.

Finally, the international trends and customer requirements for European port combined with the results of this research have a main conclusion which is that the competition is going to be segmented into two main parts: competition for shippers and competition for shipowners. Also, this competition will focus in two main factors where the most important is “quality of services” and second “price”.


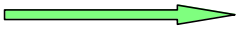
The analysis of the industry is finished and the next step is the creation of the competitive strategy. The next chapter will deal with the suggestion of the most suitable strategy for each port based on the forecasted traffic, assumptions and capabilities of each competitor, and the three Generic Competitive Strategies.

CHAPTER 5

5 BUILDING COMPETITIVE STRATEGY

The present chapter represents the final part of the process to build the competitive strategy for the ports subject to study. The information collected from the research made in chapters 3 and 4 will be processed in order to find the best possible competitive strategy for each container port in the range.

The chapter describes the competitive strategy for each port according to the elements considered in the “Flower and Competition”. However, here the elements will be divided into two main blocks that cover the necessities and main requirements for the customers. The blocks are divided into:

- Quality of Services to Ships  Shipowners
 - ❖ Location (with respect to Fairways)
 - ❖ Nautical Constrains
 - ❖ Port Costs
 - ❖ Ship Facilities
- Quality of Services to Cargo  Shippers
 - ❖ Location (with respect to the main industrial zones Chapter 4. p 36)
 - ❖ Distribution Costs
 - ❖ Cargo Services
 - ❖ Value Added

Each element is clearly defined in the competitor analysis (4.4) and the criteria for the evaluation of each element is shown in Appendix II.

Finally, the strategy will be built according to the Generic Competitive Strategies (2.3) discussed in Chapter 2, the tendency of the port according to the matrix proposed where the ports are categorized and the level of the “quality of services for ships and cargo” proportionate by the each port.

5.1 Port Classification

The actual port classification can be done taking into consideration the quality of services to ships and cargo. The figure below expresses the relationship between these two parameters and the classification, which reflects the strategies applicable.

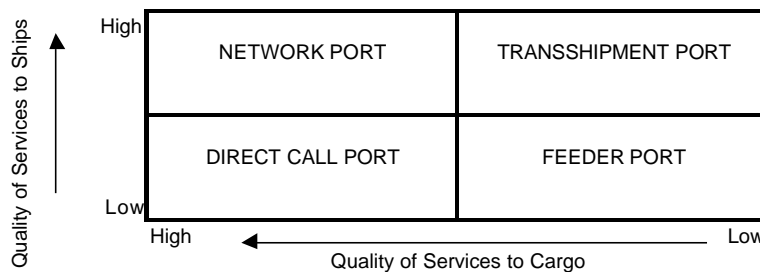


Figure 12. Port classification according to the quality of services provided

The classification of each type of port in this matrix emphasizes the characteristics of the traffic attracted by these ports which must be linked to the strategy followed.

- Network Port: provide high quality to ships and cargo. Consequently, they generate traffic from/to the port and hinterland which makes them commercially attractive and in addition have the ship facilities, channels of distribution, low cost per ship to give an incentive transshipment traffic.
- Transshipment Port: provide high quality services to ships but low to cargo. Thus, they are dedicated to ship-shore operations and are economically attractive for cargo concentration and distribution. They assure the fastest turn around.
- Direct Call Port: provide low quality of services to ships but high to cargo. They are commercially attractive for liner shipping to call but due to their ship service disadvantages are not economically suitable for transshipment.
- Feeder Port: Ports that provide low quality of services to ships and cargo. As a result, they are not economically suitable for direct call so the network or transshipment ports feed them.

These definitions are used below to classify the port in the HLHr according to their characteristics, which are the output of the “flower of competition”. Consequently, the competitive strategy can be build according to the result of the comparison.

5.1.1 Port classification in the Hamburg-Le Havre range

The result of the port competition gives a picture of the market where the fourth type of ports are present in the range, which points out the level of the competition but at the same time turns the environment to a complementary stage.

The table on the left represents the level of competitiveness from 1 to 10 (Appendix III) of each port in the two blocks of services. The criteria for the results in the table on the right were that all the values above or equal to 5 are awarded with *high* and under 5 with *low*.

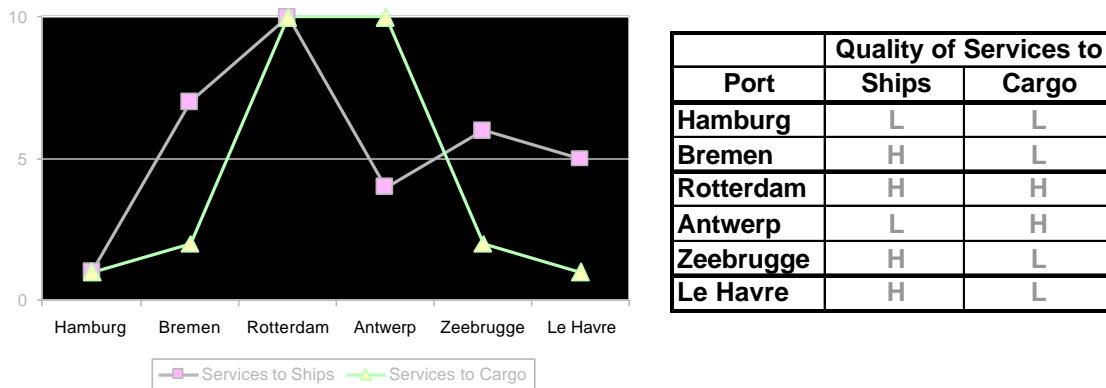


Table 28. Level of the Quality of Service to Ships and Cargo provided by ports

According to figure 12 and the result of the competitors analysis of the ports in the range it can be concluded that in the HLHr currently there are the four types of ports represented which suggests that either the competition will increase or they will complement each other which will decrease the competition.

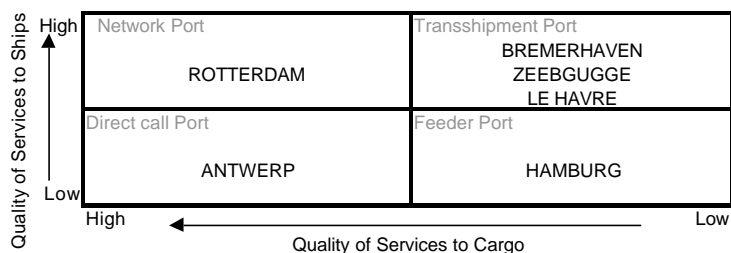


Figure 13. Classification of ports in the Hamburg-Le Havre range

Therefore, the classification of each port according to the parameter chosen gives a clear idea of the strategy that can be applied to each case. Moreover, this

classification in Figure 13 can be combined with Figure 5, Chapter 2 in order to know the best competitive strategy for each port.

5.1.2 Defining Competitive Strategy

Combining the theory of the generic competitive strategies¹ with the classification of the ports in the HLHr proposed in this paper, it is possible to see in a graphical way which strategy is more suitable to each port considering their particular characteristics. Figure 14 merges both theories in order to have in one graph the type of ports, the ports themselves and the generic strategy.

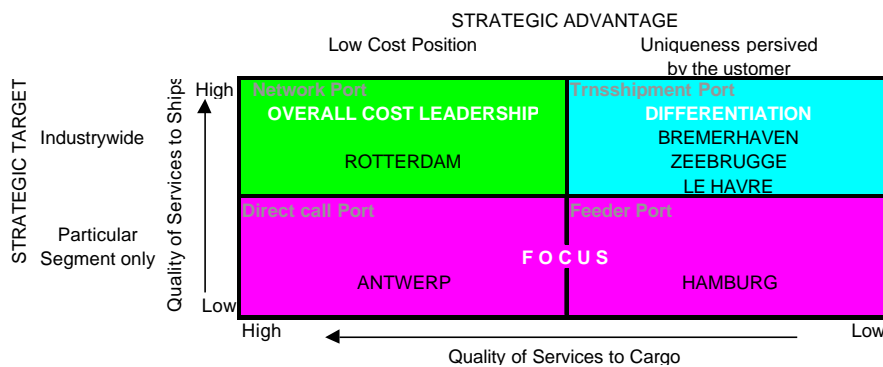


Figure 14. Competitive Strategy for the ports in the Hamburg-Le Havre range

Merging the theories gives a clear vision of what strategy must be applied by each port in the range. Furthermore, any port that can identify in which port classification it fits can easily know which strategy can be applied according to its own situation.

Indeed, from here it is also possible to determine, according to the port aspirations, whether to move from one classification to another, the kind of investment (capital or resources) to be made and the market that must be targeted. Therefore, the competitive strategy for each port will be built from the results of Figure 14, the “flower of competition, the “traffic forecasted”, “the questionnaire on competition”, assumptions, development and trends.

¹ Porter, M. ‘Competitive Strategy’ 1980. p. 35 - 40

5.2 Building the Competitive Strategy for the port of Hamburg

Hamburg was number seven in the world and number two in the range in 1998. Its main competitor (Antwerp) can almost reach it by the year 2000 and overtake it by almost 200 thousand TEU's in 2005 according to the forecast traffic as shown in Table 25, Chapter 4. Moreover, the most recent developments in the ports are:

- The dredging of the Elbe to enable vessels of 13.8m to enter despite the tide.
- The creation of Eurogate which is the merging of BLG and Eurokai.

In short, the current situation of the port of Hamburg in this particular business is entering a phase that requires the creation of competitive strategy trying to anticipate the movement of Bremerhaven and the other competitors.

5.2.1 The Competitive Strategy for Hamburg

The competitive strategy must be based on the “focus” strategy but specific elements can be used for the overall cost. However, applying the differentiation theory can be very time and capital consuming without no sustainable advantages.

5.2.1.1 The Focus Strategy

Hamburg can focus its effort to become the “Gate to the Scandinavia and Baltic Region” taking advantage of its geographical position with respect to the North Sea, Scandinavia and Baltic Region. The target here is that all cargo coming from North America, Asia and Africa to Scandinavia and Baltic States must be transported via Hamburg. The success of this strategy can be achieved if:

- The market is clearly identified, the cost benefit analysis to each traffic is clearly assessed and “special tariffs” are set for transshipment cargo or traffic targeted.
- Partnership is created with the port of Lubeck in order to develop a “land bridge” between these ports and together distribute the cargo to this region.
- A strategic alliance is made with the ports in these regions that can give us the possibility to create a “net of container traffic”. For instance, Aarhus, Helsingor, Helsingborg, Stockholm, Helsinki, Klaipeda, and others in the region.

- Rail and road transport is promoted to Scandinavia taking advantage of the excellent distribution channels and opening of the Oresund Bridge the next year.

5.2.1.2 The Overall Cost Strategy

This strategy can be achieved by attacking the port costs and the distribution costs. First of all, *reductions of port cost* by redesigning the actual price policy applying the “cost based” tariff system. The redesigning must allow shipping lines to have substantial “rebates” for calling frequency and number of container handled in the port. Of course, this policy must consider the capacity of the ship and the relation with the percentage of cargo loaded and discharged in the port. In the same way a commitment from the pilot, mooring and towing companies to apply similar price policies for container ships must be achieved.

Then, the *distribution cost strategy* is first to divide the traffic into two segments.

- a) Distribution to industrial zones in a radius of 300km mainly served by trucking companies or at least in bigger proportions and getting a commitment from them.
- b) Distribution to industrial zones in a radius greater than 300km mainly served by railway or at least in a bigger proportion and getting a commitment from them.

The second strategy is to enter into a Joint-Venture or Merge with a rail company without attempting to the rail competition and invest in better road distribution. Consequently, part of the shadow of the expensiveness of port cost will disappear and the apparent input reduction will be compensated with the increase in calls.

The final recommendations are first to open the port policy giving the opportunity to shipping liners to achieve their vertical integration allowing them to run their dedicated terminals handled by local operators. Next to launch marketing campaigns promoting these new strategies helping the customer to forget the past shadows. Indeed, the strategies proposed can be put into practice independently but the combination of focus, overall cost strategies and the final recommendations will give to the port of Hamburg the possibility to substantially increase the distance with Antwerp. But, mainly it will bring new perspectives, new traffic and consequently the new image that this port needs to compete in the range and the world.

5.3 Building the Competitive Strategy for Bremerhaven

Bremerhaven was, in 1998 twenty-second in the world and fourth in the range. Its main competitor is Hamburg because they are looking at almost the same traffic. However, the difference between them is 1.7 million TEU's in favor of Hamburg. Also, Le Havre is making pressure with a difference of 500 thousand TEU's in favor of Bremerhaven.

In addition, Bremerhaven is involved in a chain of developments that are changing the face of the port such as:

- BLG new organizational structure and new jointventures.
- Eurogate (BLG + Eurokai) possible investment by Hutchinson Ports.
- Construction of the North Sea Terminal Bremerhaven as dedicated terminal for Maersk-Sea Land handled by BLG (Eurogate)

In short, Bremerhaven is aware of the level of competition and the risks of not having the adequate structure to satisfy customer and industry requirements and trends. Thus, the strategy for Bremerhaven is clear and is according to Figure 14.

5.3.1 The Competitive Strategy for Bremerhaven

Downloading the competitive strategy for Bremerhaven the best alternative is to apply the “differentiation” strategy to exploit its comparative advantages that makes Bremerhaven an ideal candidate to become a transshipment port (Figure 13).

5.3.1.1 The Differentiation Strategy

The strategy must be addressed to create the best operational and economic environment for shipping lines with vessels of more than 5000 TEU; thus, the target is to attract them to create here their transshipment center and have Bremerhaven as the transshipment port for Northern Europe. Three points are proposed to achieve this strategy.

- Reduction of time in ports: since the objective is to differentiate the port to the rest, crane productivity must be higher than 35 movements per hour and guarantee at least 5 cranes per ship without exemptions. The operations

department must be totally committed to achieve this task, the ship shore, yard and planning operations must be very well coordinated and investments in yard equipment and new hardware if this is necessary must be deployed to guarantee success.

- Reduction of ship cost: Reduction of maneuvering time is the first step that can be achieved by perfecting the VTS, mainly by speeding up vessel transit in the channel and reducing the number of pilots onboard. Another solution is to implement a PIS from where the traffic center can control the arrivals without the necessity of pilots and a reduction in speed. Also, to apply a tariff policy as suggested above for Hamburg.
- Cargo Handling Technology: Gantry crane availability is a key element in achieving the productivity proposed; so, the number of cranes must be calculated taking into consideration the picks. However, the main point here is that Bremerhaven must invest in high-speed gantry cranes with outreach able to handle vessels 22 boxes wide and available for any customers.

Supporting this strategy a *new price policy* that promotes the transshipment traffic must be put into operation. The price strategy can be “predatory” for starting the process or based on marginal costs combined with substantial throughput “rebates” for shipping lines. Furthermore, transshipment by nature is not very stable traffic; consequently the relationship with shipowners, liners and alliances is definitely an element that the marketing department must take care of and make the relation strong and as stable as possible.

In short, combining the actual developments and the strategy proposed gives a very good position to Bremerhaven for confronting the competition in the range. Despite the fact that from the three ports that fit the classification to run for being a transshipment port Bremerhaven is the best in ship services. Therefore, the “differentiation” strategy is the best alternative to increase the throughput and take a bigger piece of the 27 million TEU’s in 2005 and 36 million TEU’s in 2010 forecasted for the range.

5.4 Building the Competitive Strategy for the port of Rotterdam

Rotterdam has been by far the number one in the range and was the number fourth in the world in 1998. Its position in the range is to certain extent comfortable because the difference to the nearest competitor is 2.5 million TEU's (Hamburg). However, the "Flower of Competition" points out Antwerp as Rotterdam's main competitor based on the fact that they are very close to each other and both are cargo oriented.

The last developments in the port of Rotterdam can be summarized as follows:

- The sale of ECT to Hutchinson ports and other investors including Rotterdam Municipality Port Management.
- The initiative of ECT about future expansion of the port to the North Sea where the investment they say must be shared by the government and private investors.
- ECT and RMPM are going global, investing in terminals around the world.

The situation of Rotterdam gives the stability to continue growing and they must follow the example of Hong Kong and Singapore in the sense that Rotterdam has to create their own container terminal net.

5.4.1 The Competitive Strategy for Rotterdam

Rotterdam is the leader in service for ships and cargo in the range and probably in the world. The strategy is "overall cost leadership" because it has the commercial availability for shippers and shipowners. Moreover, because of its hinterland, cargo services, value added and channels of distribution, the cost per unit handled in the port is cheaper. On the other hand, the frequency of calls and the big diversity of shipping lines and destinations makes the economic and commercial availability very attractive for logistic providers, industries and big global enterprises to choose this port as the center of distribution.

The strategy for Rotterdam is clear; they have to continue creating and attracting more industries to generate more cargo. However, they also have to take care of some elements like port costs and to anticipate problems of saturation or increase of

berth occupancy because this can damage the image of the port and suddenly they can lose some transshipment traffic. So, the recommendations are to:

- Reduce port costs mainly to lines that are using Rotterdam as a transshipment and promote this reduction to encourage other liners to make transshipments here.
- Continue developing new areas for expansion taking into consideration that for 2010 it is forecasted that they will handle 13 million TEU's.

Indeed, Rotterdam as the leader in any industry must command the competition and spend in R&D, not lose the focus and always be aware that because of its big weight it can be very difficult to recuperate from an injury.

5.5 Building the Competitive Strategy for the port of Antwerp

Antwerp is the most central port in the range, being the number nine in the world and three in the range in 1998. Its main competitor in throughput is Hamburg, but the pressure for Antwerp comes from Rotterdam because it is very closely located and they are serves exactly the same hinterland.

The latest developments for Antwerp show the tendency of trying to reduce the *turn around time* and make the port more attractive for shipowners. However, the port has a strong reputation as being very cargo oriented. This means that it has a strong cargo service network, which is attractive for shippers.

- Moving the container terminals to the outer part (before locks) that was the main disadvantage for the container operators.
- Construction of quay wall of 1,100 m. with a capacity for 800,000 teu that will be operating next year².

In short, the current situation of Antwerp gives the feeling that they want to compete face to face with Rotterdam and move up in port classification. However, they have to be more rational and chose a better strategy that can give to the port a sustainable development and better resources allocation.

² Fairplay (June 18, 1999). p. 23

5.5.1 The Competitive Strategy for Antwerp

The competitive strategy for Antwerp, as well as Hamburg is the “focus” strategy. However, in this case the objective or traffic target is internally produced. Antwerp has to concentrate its efforts on the creation of more cargo from/to its hinterland and assure that main liners will call at the port. This means that according to the port classification proposed in this paper Antwerp is clearly a “direct port”.

- The strategy must be addressed to create more added value, to process more primary products, to be more attractive for shippers but mainly to increase the port importance and become indispensable in the logistic and value chain of customers. The objective is to keep the cargo availability high enough to require direct calls from the main liners.
- Since the main target is the shippers a very close partnership has to be built trying to cope with all their requirements to support their activities. Furthermore, to establish a commitment and assure that they will ask for direct calls and good frequency to shipping liners.
- Promotion of competition between trucking companies and a reliable railway system in order to guarantee a high level of channel of distribution. Inland waterways must be improved.
- Moreover, it is indispensable not to forget to keep an acceptable level of service to ships and assure berth availability to avoid shipowners madness.

In short, Antwerp must focus most of its effort on creating an environment of maximum attractiveness for shippers (they have the cargo, they have the power to bring direct calls to the port). However, they have to realize the possibility that it can be an attractive alternative for shipping lines in the sense that Antwerp can be a distribution center. Thus, effective channels of distribution to central Europe together with shippers power will make Antwerp suitable to handle the cargo generated in-house plus the cargo with a final destination inside Europe.

5.6 Building the Competitive Strategy for the port of Zeebrugge

Zeebrugge represents the new kid on the block and its participation since its arrival has been very good with the highest growth registered in the range in the past two years (19%)³. Zeebrugge was number sixty-six in the world and the last in the range. Despite this data Zeebrugge presents a very fast development and its characteristics point to it being a very good candidate to become a transshipment port.

The more recent developments in Zeebrugge show the tendency for a high emphasis in increasing the ship service.

- Ocean Container Terminal overtaken by Hessianatie creating Ocean Container Terminal Hessianatie Zeebrugge (OCHZ).
- Expansion program of OCHZ quay length to 1000m and staking area capacity to 4,400 TEU. Acquisition of other post-panamax gantry cranes⁴.
- Investment in R&D where the most ambition plan is to construct a container gantry crane with two trolleys in the same boom, each with a different driver.

The situation of Zeebrugge is ideal to start the implementation of competitive strategies emphasizing their main natural advantages and the technology available.

5.6.1 The Competitive Strategy for Zeebrugge

The best alternative for Zeebrugge to compete in the range is according to Figure 3 is to apply the “differentiation” strategy taking advantage of its comparative advantages such as location, nautical constraints and low port costs which make Zeebrugge the ideal candidate to become a transshipment port and compete for transshipment traffic.

The strategy must be ship services oriented, and all efforts must be directed to build a strong reputation in container handling; moreover, the traffic has to be segmented in order to clearly identify the requirements of each traffic. The success of the strategy depends on the following points.

³ Port of Zeebrugge ‘<http://www.portofZeebrugge.com>’ 1999.

⁴ Fairplay (June 18, 1999). p. 23 -24

- Marketing promotions must be intensified pointing out the natural advantages, operational achievements, economic advantages and logistic benefits of choosing Zeebrugge as transshipment port. Traffic from North America and mainly Asia must be targeted.
- The operations department must assure that productivity over 35 movements per hour is provided. Coordination between ship-shore and yard operation must be efficient.
- Berth, crane and yard occupancy ratios must be kept as low as possible to avoid any queue, ship waiting time and idle times.
- Promote the creation of dedicated terminals for main shipping liners.
- The price policy must be performed with the aim to attract transshipment traffic, and must be based on marginal costs at the beginning of the strategy. Moreover, substantial “rebates” must be provided to shipping liners for the volumes of traffic handled.

In brief, the differentiation must come from the high productivity, low cost and ship facilities available. This strategy will allow Zeebrugge to become a transshipment port and start to climb up in the world rankings.

5.7 Building the Competitive Strategy for the port of Le Havre

The port of Le Havre is one of the ports in the range that has the most central position in the competitor analyses. Le Havre was number thirty-three in the world and fifth in the range in 1998. Its main competitor is Zeebrugge because they are in fact competing for the same type of traffic.

The main developments related to Le Havre are taking the initiative to make the port more efficient as well as more attractive for ships and cargo.

- The Ministry of Transport has launched a proposal with the purpose of modernizing the port system in France.
- The Plan 2000 has been carried out with success in its first phase.

Le Havre has to work very hard if it wants to continue developing its traffic. The work must be done in several aspects but must mainly focus on making customers forget past problems.

5.7.1 The Competitive Strategy for Le Havre

The research carried out expresses the necessity of Le Havre to start working on the strategy of “differentiation” using its natural advantages in the first place and secondly the ship facilities available.

The strategy must be similar the strategy for Zeebrugge since both are classified as suitable transshipment ports. In addition to the five points suggested for Zeebrugge, four points are suggested for reconstructing the image of the port and starting the development needed to become a real protagonist in the competition.

- To open the policy of the port by inviting global container operators like Hutchinson, PSA, ICTSI to operate the terminals. This will bring the know how needed and the competitive environment indispensable for Le Havre.
- To target mainly the Asia-Europe traffic taking advantage of the fact that they are the first port on this route.
- To develop new terminals outside the locks with the participation of global operators or encourage shipping lines to establish their dedicated terminals.
- To carry out an extensive promotion of the port pointing out the developments, the new era of the port and the interest of the global players in the port. The organization in charge of this promotion must be something other than the “Port Alliance”.

Le Havre has to make a huge effort if it wants to really take a piece of the traffic from the competition. The industry is demanding competition in the physical, operational, economical, technological and management aspects. Le Havre has the tools, so it only needs to switch on the engine and take the best piece of the traffic.

In the end, the strategies suggested for each port are based on the research carried out through this paper and reflect the best suitable Competitive Strategy in each case. This Generic Competitive strategies try to take advantage of the sustainable competitive advantage and magnify it to get the maximum benefits changing the rules of the market on their favor.

Table 14 which is the combination of “the classification of ports” suggested by this paper with the table of the three “generic competitive strategies” and the results of the analysis of the “flower of competition” is a very good tool for the purpose of identifying the best suitable strategy for ports in any range in the world.

The present chapter was the final part of the process of the analysis of the container port competition and the methodologies for identifying the competitive strategy. Therefore, the tasks of this paper have been reached and the next pages give the conclusion of the whole research.

CHAPTER 6

6 CONCLUSIONS

Competitive Strategies are the vehicle for managers to take control of the market and to build a stronger reputation in their environment. The analysis of markets behavior and competitors is a fascinating subject that requires the analyst to apply economic concepts, analytical techniques and adapt them to their particular situation.

Therefore, for the purposes of this paper the more useful economic concepts were those that described the type of competition and the firm's demand in perfect and imperfect competition. Furthermore, "Competitive Strategy"¹ was an exceptional tool for industry and competitor analysis.

This paper described the process of building a competitive strategy for container ports from the theoretical aspects to the decision of the competitive strategy. The HLHr was selected as the market to study because it is geographically near, fighting to serve the same hinterland, but mainly because of the high competitiveness of its ports. The process was divided into three main parts:

- Analysis of the EU market from the political, economic and legal perspectives.
- Analysis of the industry and competitor, trends and customer requirements.
- Building the competitive strategy for each port in the range.

First of all, the EU had since its creation, made a commitment to create and promote competition as a source to improve service and product quality. The EU process suggests that this competitive boom had its beginning in the Treaty of Rome in 1957 when the Union was enlarged to the economic activities which imposed the free trading of goods, capital and persons which enlarged the hinterland and consequently the competition between ports.

¹ Portler, M. 'Competitive Strategy' 1980

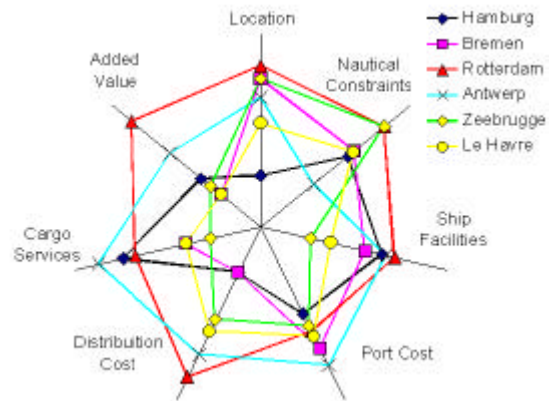
Moreover, the economic power of the EU is manifested with a stable growth of 2,5% during the last five years and the biggest GDP in value in the last ten years. Since container traffic is the industry analyzed the research shows that 82% of the traffic is generated from/to Germany, the UK, France, Italy and Benelux, which is the hinterland targeted. The external trade goes from/to NAFTA and DAE which points out the importance of the ports as catalysts of commercial activities.

Then, the legal implication for the regulation of competition is stated in articles 85 and 86 of the EC competition law and the main efforts to promote competition in the port industry are contemplated in the “Green Paper”. This covers the necessities to improve port efficiency and infrastructure, and promotes free and fair port competition. However, the big issue is the matter of dissatisfaction of competitors in the sources of port finance that creates distortion in the port industry competition.

Second, the analysis proposed was divided in the development of the container traffic in Europe, and the competition in the HLHr. In the first place, Europe an participation in world container traffic has been 23% since 1990 and has had a stable growth over other economic regions. Also, it was interesting to find out that GDP and trade in value have a strong correlation (0.99 and 0.98) with container traffic growth. Furthermore, the forecast built on these economic indicators showing an impressive growth of 40% for 2005 increasing the market to 65.5 million TEU’s for Europe and 27.3 million TEU’s for the range. Moreover, the traffic will increase 121%reaching to 87 million TEU’s for Europe and 36.2 million TEU’s for the range. This market increase requires the starting of competitive moves by the players in order to get the biggest possible piece of traffic in the most effective way.

The competition in the range was analyzed in three main steps. First, the analysis reflects that the actual competition in the range is working in “Oligopolistic Competition” because 50% of the competitors will keep 70% of the container traffic and this will continue at least for the next ten years.

Next, the “Flower of Competition” points out that Rotterdam is by far the leader of the competition followed by Antwerp. The other four ports show an equilibrium in competition terms among them but the distance with the two biggest is worrying because it is causing an imperfect competition.

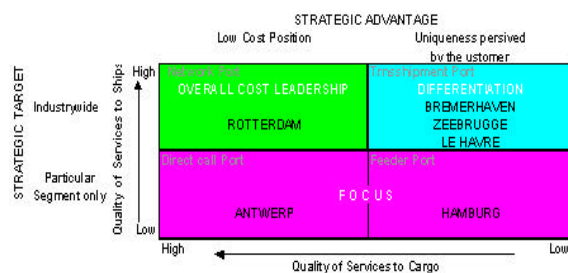


Furthermore, the right side of the graph that represent the “services to ships” shows a closer distance between competitors which means that high competition is taking place in this sector of the business mainly because of the transshipment traffic war.

The “questionnaire on competition” shows that the container port industry is in “transition to maturity”. This is because, players categorized the factors for competition as most relevant “quality of services” and second “price”. So, according to customer demands the rule is to provide “the best quality at the lower price”.

The last part of the analysis suggests the best competitive strategy for each port. Furthermore, considering “quality of services to ships” (shipowners related) and the “quality of services to cargo” (shippers related), the ports were classified in four categories which were linked to the competitive strategy (Figure 14 p.60).

Moreover, the assessed according to the two main factors shows that the tendency is that Rotterdam has the characteristics to become the network port without to much competition.



However, the competition to become the transshipment port is very high because Bremerhaven, Zeebrugge and Le Havre are qualified to run for this classification. Antwerp has the characteristics to be a direct call and Hamburg is running the danger of becoming a feeder port according to its characteristics, which are relative to the other players in the range.

Therefore, the best suitable competitive strategy for Rotterdam is “overall cost leadership”, so it has to try to attack those factors where they are weak and continue to grow based on innovation and anticipation of customer requirements. For Bremerhaven, Le Havre and Zeebrugge the strategy is “differentiation”, so they have to create the best environment possible for shipping lines in order to be recognized as the best ship oriented. Finally, the strategy for Antwerp and Hamburg is “focus”, however, Antwerp must be oriented to produce their own cargo and be attractive for shippers and Hamburg must be oriented in a different segment of the traffic such as for Scandinavia and the Baltic States.

All in all, the picture of the future in the Hamburg-Le Havre range is quite clear with high throughputs, “oligopolistic competition”, container port industry in “transition to maturity”, “few shipping liners calling few ports”, and customers requiring commercial availability, no physical constraints, high productivity, and mainly effective “inland transport networks”.

Undoubtedly the competition will be very tough. However, this competition will be divided into two segments, the first being the competition for shippers and the second for shipowners. Rotterdam will be competing in both segments, Antwerp and Hamburg will be competing for shippers and Zeebrugge and Bremerhaven will be fighting for transshipment cargo. If, Le Havre does not make radical changes in its management style it will be entirely out of the competition in the range.

The trend and customer requirements will turn the balance in favor of ship oriented ports; therefore, there will be in the future one transshipment port in the north of the range (Bremerhaven), one in the south (Zeebrugge) and one in the center (Rotterdam). However, the success key for Bremerhaven and Zeebrugge is to deploy an efficient inland transport network, to get cooperation agreements with Hamburg and Antwerp respectively, and to perform their “competitive strategy” based on systematic industrial and competitor analysis.

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APPENDIX I

Traffic forecast for Europe and the Hamburg-Le Havre range

1. Traffic forecast for Europe

The forecast was done taken into consideration the GDP in million ECU and the projections of annual growth of 2.5% made by WEFA and the trade in value with figures and projections of annual growth 3.5% made of by EUROSTAT for the next ten years

Year	EU GDP mill ECU	Growth %	EU trade in value mill ECU	Growth %	Througput of TEU Europe GDP	Growth %	Througput of TEU Europe Trade	Growth %	Througput of TEU GDP + Trade	Growth %
1991	5,645,100		2,517,454,000		23,063,000		23,063,000		23,063,000	
1992	5,884,500	4.2	2,547,265,000	1.2	24,477,000	6.1	24,477,000	6.1	24,477,000	6.1
1993	5,902,700	0.3	2,507,166,000	-1.6	26,012,000	6.3	26,012,000	6.3	26,012,000	6.3
1994	6,192,100	4.9	2,801,106,000	11.7	28,333,000	8.9	28,333,000	8.9	28,333,000	8.9
1995	6,434,300	3.9	3,105,431,000	10.9	30,451,000	7.5	30,451,000	7.5	30,451,000	7.5
1996	6,764,900	5.1	3,273,517,000	5.4	32,582,570	7.0	32,582,570	7.0	32,582,570	7.0
1997	6,940,780	2.6	3,444,540,551	5.2	36,000,000	10.5	36,000,000	10.5	36,000,000	10.5
1998	7,114,300	2.5	3,565,099,471	3.5	39,371,564	9.4	39,371,564	9.4	39,371,564	9.4
1999	7,292,157	2.5	3,689,877,952	3.5	42,827,418	8.8	42,030,643	6.8	42,429,030	7.8
2000	7,474,461	2.5	3,819,023,681	3.5	46,369,668	8.3	45,336,395	7.9	45,853,031	8.1
2001	7,661,322	2.5	3,952,689,509	3.5	50,000,474	7.8	48,388,814	6.7	49,194,644	7.3
2002	7,852,855	2.5	4,091,033,642	3.5	53,722,050	7.4	51,794,066	7.0	52,758,058	7.2
2003	8,049,177	2.5	4,234,219,820	3.5	57,536,666	7.1	55,154,519	6.5	56,345,593	6.8
2004	8,250,406	2.5	4,382,417,513	3.5	61,446,647	6.8	58,741,900	6.5	60,094,273	6.7
2005	8,456,666	2.5	4,535,802,126	3.5	65,454,377	6.5	62,381,972	6.2	63,918,174	6.4
2006	8,668,083	2.5	4,694,555,201	3.5	69,562,301	6.3	66,198,019	6.1	67,880,160	6.2
2007	8,884,785	2.5	4,858,864,633	3.5	73,772,923	6.1	70,115,249	5.9	71,944,086	6.0
2008	9,106,905	2.5	5,028,924,895	3.5	78,088,810	5.9	74,191,166	5.8	76,139,988	5.8
2009	9,334,577	2.5	5,204,937,266	3.5	82,512,595	5.7	78,395,352	5.7	80,453,974	5.7
2010	9,567,942	2.5	5,387,110,071	3.5	87,046,974	5.5	82,756,276	5.6	84,901,625	5.5

Strong correlation was founded between these two economic indicators and the increase of container traffic in Europe.

Correlation = **0.99** EU GDP Vs. Container Traffic

Correlation = **0.97** EU Trade in Value Vs. Container Traffic

The figures of the economic indicators were projected using the growth forecasted by WEFA and EUROSTAT respectively and for the projections of traffic was done using the TIME SERIES analysis. Finally, from the results of the projections of both economic indicators an average was calculated which is the best approach to the forecast of the container traffic.

2. Traffic forecast for the Hamburg-Le Havre range

The forecast was done taken into consideration the GDP in million ECU and the projections of annual growth of 2.5% made by WEFA and the trade in value with figures and projections of annual growth 3.5% made of by EUROSTAT for the next ten years

Year	EU GDP mill ECU	Growth %	EU trade in value mill ECU	Growth %	Throughput of TEU Europe GDP	Growth %	Throughput of TEU Europe Trade	Growth %	Throughput of TEU GDP + Trade	Growth %
1991	5,645,100		2,517,454,000		10,107,583		10,107,583		10,107,583	
1992	5,884,500	4.2	2,547,265,000	1.2	10,750,262	6.4	10,750,262	6.4	10,750,262	6.4
1993	5,902,700	0.3	2,507,166,000	-1.6	11,155,066	3.8	11,155,066	3.8	11,155,066	3.8
1994	6,192,100	4.9	2,801,106,000	11.7	12,377,235	11.0	12,377,235	11.0	12,377,235	11.0
1995	6,434,300	3.9	3,105,431,000	10.9	12,845,495	3.8	12,845,495	3.8	12,845,495	3.8
1996	6,764,900	5.1	3,273,517,000	5.4	13,721,429	6.8	13,721,429	6.8	13,721,429	6.8
1997	6,940,780	2.6	3,444,540,551	5.2	15,390,204	12.2	15,390,204	12.2	15,390,204	12.2
1998	7,114,300	2.5	3,565,099,471	3.5	16,753,448	8.9	16,753,448	8.9	16,753,448	8.9
1999	7,292,157	2.5	3,689,877,952	3.5	17,434,283	4.1	17,613,487	5.1	17,523,885	4.6
2000	7,474,461	2.5	3,819,023,681	3.5	19,002,605	9.0	18,978,942	7.8	18,990,774	8.4
2001	7,661,322	2.5	3,952,689,509	3.5	20,097,950	5.8	20,192,352	6.4	20,145,151	6.1
2002	7,852,855	2.5	4,091,033,642	3.5	21,297,637	6.0	21,410,431	6.0	21,354,034	6.0
2003	8,049,177	2.5	4,234,219,820	3.5	22,706,426	6.6	22,808,831	6.5	22,757,628	6.6
2004	8,250,406	2.5	4,382,417,513	3.5	23,932,866	5.4	24,137,406	5.8	24,035,136	5.6
2005	8,456,666	2.5	4,535,802,126	3.5	25,317,972	5.8	25,562,401	5.9	25,440,187	5.8
2006	8,668,083	2.5	4,694,555,201	3.5	26,718,484	5.5	27,046,731	5.8	26,882,607	5.7
2007	8,884,785	2.5	4,858,864,633	3.5	28,109,234	5.2	28,548,600	5.6	28,328,917	5.4
2008	9,106,905	2.5	5,028,924,895	3.5	29,589,133	5.3	30,132,712	5.5	29,860,922	5.4
2009	9,334,577	2.5	5,204,937,266	3.5	31,074,038	5.0	31,759,798	5.4	31,416,918	5.2
2010	9,567,942	2.5	5,387,110,071	3.5	32,600,868	4.9	33,441,464	5.3	33,021,166	5.1

Strong correlation was founded between these two economic indicators and the increase of container traffic in the Hamburg-Le Havre range.

Correlation = **0.98** EU GDP Vs. Container Traffic

Correlation = **0.97** EU Trade in Value Vs. Container Traffic

The figures of the economic indicators were projected using the growth forecasted by WEFA and EUROSTAT respectively and for the projections of traffic was done using the TIME SERIES analysis. Finally, from the results of the projections of both economic indicators an average was calculated which is the best approach to the forecast of the container traffic.

More information about Time Series analysis can be found in “Statistics for Business and Economics” of Anderson Sweeney, fifth edition, pp. 671 – 674.

APPENDIX II

Factors for Competition

The “Flower of Competition” was build with seven factors that are very important for the competition in the Hamburg-Le Havre range.

Each factor was ranked using a scale from 1 to 10. For instance, the distance to main industrial zones the minor average was awarded with 10 points and the biggest one with 1 the rest was distributed according to the frequency as is shown in the figure.

Distribution of point for average distance			
526	to	548	10
548	to	570	9
570	to	592	8
592	to	614	7
614	to	636	6
636	to	658	5
658	to	680	4
680	to	702	3
702	to	724	2
724	to	746	1

1. LOCATION. In this case two elements where taken into consideration:

- Distance from ports to main Industrial Zones
- Distance from the main routes (fairways) to the entrance of the port.

Ports	Dist to IZ	Points	Dist to FW	Points	TOTAL
Hamburg	745	1	100	1	1
Bremen	556	9	25	8	8.5
Rotterdam	551	9	0	10	9.5
Antwerp	526	10	70	4	7
Zeebrugge	606	7	0	10	8.5
Le Havre	736	1	12	9	5

Distance in Km to main industrial zones in Europe

Cities	Hamburg	Bremen	Rotterdam	Antwerp	Zeebrugge	Le Havre
Berlin	289	312	610	632	759	948
London	990	631	319	316	190	221
Brussels	600	391	119	41	130	337
Prague	630	511	729	720	848	1031
Amsterdam	440	276	56	130	210	459
Dusseldorf	338	241	174	164	294	511
Paris	920	651	373	302	254	178
Frankfurt	490	336	357	323	443	611
Zurich	932	632	586	523	604	667
Munich	782	581	662	621	732	855
Milan	1200	842	796	730	798	817
Linz	661	657	808	779	899	1041
Vien	950	758	946	924	1047	1199
Budapest	1211	971	1176	1156	1279	1430
AVERAGE	745	556	551	526	606	736

2. NAUTICAL CONSTRAINTS: This factor take into consideration.

- The minimum Draft of the port or entrance channel.
- Number of Pilots used for the entrance to the port.
- Number of Locks crossed to arrive to the terminals.

Ports	Draft	Points	Pilots	Points	Locks	Points	TOTAL
Hamburg	12.3	1	2	6	0	10	5.7
Bremen	14	6	3	3	0	10	6.3
Rotterdam	15.6	10	1	8	0	10	9.3
Antwerp	12.2	1	4	1	1	5	2.3
Zeebrugge	15.8	10	1	8	0	10	9.3
Le Havre	14	6	1	8	0	5	6.3

3. SHIP FACILITIES: This factor took into consideration.

- Number of Panamax Gantry Cranes available in the port.
- Number of Post-Panamax Gantry Cranes available in the port.
- Total length of dedicated container quays.

Ports	Panamax	Points	Postpanamax	Points	Berths L.	Points	TOTAL
Hamburg	26	10	16	5	7273	5	6.7
Bremen	15	5	7	1	12000	10	5.3
Rotterdam	19	7	26	10	8600	6	7.7
Antwerp	23	9	10	2	11473	10	7.0
Zeebrugge	6	1	8	1	3665	1	1.0
Le Havre	14	5	8	1	5250	2	2.7

4. PORT COST: This factor was assessed using a study carry on by Mr. Otto Lodder, Port and Terminal, Tariff Negotiations Manager, P%O Nedlloyds in May 1997. Where he considered ,

- Port Cost include pilotage, towage, mooring and port dues for vessels 4500 teu's
- The cost per teu according to port cost and volume handled.

Ports	Port Call Cost (4500 TEU's)		Average cost per TEU			TOTAL	
	Ship exp(weekl call)	Points	Volume	TEU Cost	Points	Points	
Hamburg	USD	50000	1	70000	37	8	4.5
Bremen	USD	35000	10	35000	52	5	7.5
Rotterdam	USD	47500	2	100000	25	10	6
Antwerp	USD	35000	10	50000	36	8	9
Zeebrugge	USD	35000	10	25000	73	1	5.5
Le Havre	USD	35000	10	30000	61	3	6.5

5. **DISTRIBUTION COST:** This factor was also assessed using the same study made by Mr. Otto Lodder. Here was analyzed the cost of distribution to eight industrial zones. The prices are in USD.

Zones	Hamburg	Bremerhaven	Rotterdam	Antwerp	Zeebrugge	Le Havre	Distribution cost		
							Ports	Cost USD	Points
Paris	900	900	655	550	550	330	Hamburg	509	1
Duisburg	300	300	250	263	400	400	Bremen	509	1
Milan	750	650	250	425	450	625	Rotterdam	382	10
Vienna	450	550	550	500	500	500	Antwerp	417	8
Riga	350	350	225	400	400	450	Zeebrugge	446	5
Gotemb	425	425	500	450	470	470	Le Havre	441	6
Belfast	450	450	250	325	450	275			
Lisbon	450	450	375	425	350	475			
Average	509	509	382	417	446	441			

6. **CARGO SERVICES:** This factor took into consideration the square meters of warehouse available in the port for logistics purposes.

Warehouses in sqm		
Ports	Space	Points
Hamburg	3350	8
Bremen	1500	3
Rotterdam	3000	7
Antwerp	4500	10
Zeebrugge	250	1
Le Havre	1000	3

7. **ADDED VALUE:** The assessment of this factor was according to “Value Added Analysis (VAA) as a tool for Strategic Planning” from the University of Antwerp.

Value Added measure in tonnes value		
Ports	Index	Points
Hamburg	0.54	3
Bremen	0.30	1
Rotterdam	1.54	10
Antwerp	1.00	6
Zeebrugge	0.44	2
Le Havre	0.27	1

APPENDIX III

Questionnaire on Competition

1. Do you think that there is Competition between Container Terminals in Northern Europe in the range from Hamburg to Le Havre?

YES

NO

*If the answer is yes, specify the level and quality of the Competition. Choose one on each column.

LEVEL

VERY HIGH

HIGH

BMEDIUM

LOW

QUALITY

PERFECT

IMPERFECT

FAIR

UNFAIR

2. In the regional and international market, what do you think the factors are that are driving the Competition between Container Terminals?

*You can choose more than one using the left square and use the right one for prioritize the factors.

<input type="checkbox"/>	PRICE	<input type="checkbox"/>
<input type="checkbox"/>	TRANSHIPMENT SERVICES	<input type="checkbox"/>
<input type="checkbox"/>	QUALITY OF SERVICES TO SHIPS	<input type="checkbox"/>
<input type="checkbox"/>	QUALITY OF SERVICES TO CARGO	<input type="checkbox"/>
<input type="checkbox"/>	INFORMATION TECHNOLOGY	<input type="checkbox"/>
<input type="checkbox"/>	INLAND CONNECTIONS	<input type="checkbox"/>
<input type="checkbox"/>	CARGO HANDLING TECHNOLOGY	<input type="checkbox"/>
<input type="checkbox"/>	STORAGE FACILITIES	<input type="checkbox"/>
<input type="checkbox"/>	GRACE DELAY FOR FREE STORAGE	<input type="checkbox"/>
<input type="checkbox"/>	OTHERS (SPECIFY)	<input type="checkbox"/>

3. In the North European market you are competing with other ports in the container industry. From your perspective, select three ports and rate them from the most competitive to the least?

1st Port

2nd Port

3rd Port

A. Hamburg B. Bremerhaven

C. Rotterdam D. Antwerp

E. Zeebrugge F. Le Havre

4. What are the factors of Competition that the three main terminals that you chose as the most Competitive ones are focusing on? You can choose more than one per terminal.

	1 st Terminal	2 nd Terminal	3 rd Terminal
OVERALL COST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DIFERENCIATION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FOCUS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Indicate why your customers prefer your container terminal services, rather than the services offered by your competitors by prioritizing the items from the most important to the least.

*Use the letters of the corresponding factors listed below.

	SHIPOWNERS	SHIPPERS	
Priority 1	<input type="checkbox"/>	<input type="checkbox"/>	A. PRESTIGE B. PRICE
Priority 2	<input type="checkbox"/>	<input type="checkbox"/>	C. QUALITY OF SERVICES D. SHIP PRODUCTIVITY
Priority 3	<input type="checkbox"/>	<input type="checkbox"/>	E. CONTRACT FLEXIBILITY F. INLAND FACILITIES

6. In your perspective, why do the competitor's customers prefer their services instead of becoming your customers? *Use the letters of the corresponding factors listed below.

	SHIPOWNERS	SHIPPERS		
Priority 1	<input type="text"/>	<input type="text"/>	A. PRESTIGE	B. PRICE
Priority 2	<input type="text"/>	<input type="text"/>	C. QUALITY OF SERVICES	D. SHIP PRODUCTIVITY
Priority 3	<input type="text"/>	<input type="text"/>	E. CONTRACT FLEXIBILITY	F. INLAND FACILITIES

7. Which are the pillars of your success or the base that has placed you in the place that you actually have in the market?

*Use the letters of the corresponding factors listed below.

Priority 1	<input type="text"/>	A. EQUIPMENT AND FACILITIES	B. MARKETING FORCE
Priority 2	<input type="text"/>	C. LABOUR SKILLS	D. PRICE POLICY
Priority 3	<input type="text"/>	E. MANAGEMENT STYLE	F. TECHNOLOGY AVAILABLE

8. In which areas are your competitors vulnerable?

	1 st Terminal	2 nd Terminal	3 rd Terminal
PRICE	<input type="text"/>	<input type="text"/>	<input type="text"/>
PHYSICAL CONSTRAIN	<input type="text"/>	<input type="text"/>	<input type="text"/>
QUALITY OF SERVICES	<input type="text"/>	<input type="text"/>	<input type="text"/>
INFORMATION TECHNOLOGY	<input type="text"/>	<input type="text"/>	<input type="text"/>
INLAND CONNECTIONS	<input type="text"/>	<input type="text"/>	<input type="text"/>
CARGO HANDLING TECHNOLOGY	<input type="text"/>	<input type="text"/>	<input type="text"/>
STORAGE FACILITIES	<input type="text"/>	<input type="text"/>	<input type="text"/>
GRACE DELAY FOR FREE STORAGE	<input type="text"/>	<input type="text"/>	<input type="text"/>

9. What is you and your competitors' ability to adapt to changed conditions in each functional area?. In particular can you and your competitors adapt to:

	Own Terminal	1 st Terminal	2 nd Terminal	3 rd Terminal
COMPETING ON COST	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
INTRODUCTION OF NEW TECHNOLOGY	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
ADDING NEW SERVICES	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
COMPETING IN SERVICES	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
INTRODUCTION OF NEW COMPETITORS	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
ADDING NEW EQUIPMENT	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

10. Can you and your competitors respond to possible exogenous events such as:

	Own Terminal	1 st Terminal	2 nd Terminal	3 rd Terminal
A SUSTAINED RATE OF INFLATION	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
TECHNOLOGICAL CHANGES THAT MAKE THE EXISTING CARGO HANDLING EQUIPMENT OBSOLETE	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
INCREASE OF WAGE RATE	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
NEW GOVERNMENTAL REFORMS THAT WILL AFFECT THIS BUSINESS	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

11. Are your competitors satisfied with their current position?

	1 st Terminal	2 nd Terminal	3 rd Terminal
YES	<input type="text"/>	<input type="text"/>	<input type="text"/>
NO	<input type="text"/>	<input type="text"/>	<input type="text"/>

12. Taking into consideration the competitors' current position in the market and their goals, are they likely to attempt to initiate Competitive Strategic moves?

	1st Terminal	2nd Terminal	3rd Terminal
YES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. Based on the competitors' goals, assumptions and capabilities relative to their existing position, what are the three most probable Competitive Strategic moves that the competitors will make?

*You can choose more than one.

	1st Terminal	2nd Terminal	3rd Terminal
PRICE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TRANSHIPMENT SERVICES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
QUALITY OF SERVICES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INFORMATION TECHNOLOGY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INLAND CONNECTIONS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CARGO HANDLING TECHNOLOGY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
STORAGE FACILITIES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GRACE DELAY FOR FREE STORAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CREATION OF ADDED VALUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INVEST IN OTHER ACTIVITIES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
JOINT STOCK HOLDING IN OTHER TERM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. Do you think that there is Competition between Container Terminals in your port?

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
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*If the answer is yes, specify the level and quality of the Competition. Choose one on each column.

LEVEL		QUALITY	
VERY HIGH	<input type="checkbox"/>	PERFECT	<input type="checkbox"/>
HIGH	<input type="checkbox"/>	IMPERFECT	<input type="checkbox"/>
BMEDIUM	<input type="checkbox"/>	FAIR	<input type="checkbox"/>
LOW	<input type="checkbox"/>	UNFAIR	<input type="checkbox"/>

15. In the local market you are competing with other Container Terminals. From your perspective, select the best three terminals and rate them from the most Competitive to the least?

1 st Terminal	<input type="checkbox"/>	A. ANTWERP COMBINED TERMINAL	B. HESSENATIE
2 nd Terminal	<input type="checkbox"/>	C. MARITIME TERMINALS	D. MEXICO NATIE
3 rd Terminal	<input type="checkbox"/>	E. NOORD NATIE TERMINALS	F. NOORDZEE TERMINAL
		G. SEAPORT TERMINALS	H. WESTERLUND

16. What are the attitudes that are driving the goals of the three main Container Terminals in your port? *You can choose more than one.

	1 st Terminal	2 nd Terminal	3 rd Terminal
PROFITABILITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MARKET POSITION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RATE OF GROWTH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DESIRED LEVEL OF RISK	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CREATION OF ADDED VALUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OTHERS (SPECIFY)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. What kind of managers comprises the leadership, particularly the Chief Executive officers (CEO), in your terminal and those of the competitors? Use "Own Terminal" only if your terminal is not among the three main competitors in your port.

	Own Terminal	1st Terminal	2nd Terminal	3rd Terminal
EXPERIENCED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EXPERIENCED AND TRAINED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TRAINED YOUNG MANAGERS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. What is the overall importance of your Container Terminal for your company and what is the importance of your competitors' Container Terminals for their companies?

	Own Terminal	1st Terminal	2nd Terminal	3rd Terminal
CORE BUSINESS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
USED AS ADDED VALUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PART OF THE LOGISTIC SERV.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. In which areas have you and your competitors started or succeeded as a company?

	Own Terminal	1st Terminal	2nd Terminal	3rd Terminal
INTRODUCTION OF NEW TECHNO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INNOVATIVE MARKETING TECHNIQ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
REDUCTION OF COSTS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INNOVATIVE MANAGEMENT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EXPANDING EQUIP AND FACILITIES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CAPACITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ENLARGE SCOPE OF ACTIVITIES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INVEST IN OTHER COMP TERMINAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20. Are you satisfied with the position that your Container Terminal has in the markets?

	YES	NO
LOCAL MARKET	<input type="checkbox"/>	<input type="checkbox"/>
REGIONAL MARKET	<input type="checkbox"/>	<input type="checkbox"/>
INTERNATIONAL MARKET	<input type="checkbox"/>	<input type="checkbox"/>

21. Is your company involved in any Competitive Strategy in order to increase your market share?

YES NO

*If the answer is yes, select the factors that are part of your Strategy by checking the appropriate boxes on the left, and classify them according to how important they are on the right.

<input type="checkbox"/>	REDUCTION OF OVERALL COST	<input type="checkbox"/>
<input type="checkbox"/>	INCREASING SHIP PRODUCTIVITY	<input type="checkbox"/>
<input type="checkbox"/>	INCREASING QUALITY OF SERVICES	<input type="checkbox"/>
<input type="checkbox"/>	OFFERING LOGISTIC SERVICES	<input type="checkbox"/>
<input type="checkbox"/>	AUTOMATION TECHNOLOGY	<input type="checkbox"/>
<input type="checkbox"/>	EXPANDING INLAND CONNECTIONS CAPACITY	<input type="checkbox"/>
<input type="checkbox"/>	EXPANDING EQUIPMENT AND FACILITIES CAPACITY	<input type="checkbox"/>

22. How have you and your competitors reacted to particular Competitive Strategic moves or industry events in the past?

	Own Terminal	1st Terminal	2nd Terminal	3rd Terminal
RATIONALLY	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
EMOTIONALLY	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
SLOWLY	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
QUICKLY	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

23. Do you think that your competitors (local, regional and international) are prepared to retaliate the consequences of your Competitive Strategies moves?

	LOCAL	REGIONAL	INTERNATIONAL
ALL OF THEM	<input type="text"/>	<input type="text"/>	<input type="text"/>
MOST OF THEM	<input type="text"/>	<input type="text"/>	<input type="text"/>
FEW OF THEM	<input type="text"/>	<input type="text"/>	<input type="text"/>
NONE OF THEM	<input type="text"/>	<input type="text"/>	<input type="text"/>

24. Are you prepared to deal with the Strategy moves of your competitors in the three markets?

	YES	NO
LOCAL MARKET	<input type="text"/>	<input type="text"/>
REGIONAL MARKET	<input type="text"/>	<input type="text"/>
INTERNATIONAL MARKET	<input type="text"/>	<input type="text"/>

25. From your perspective which are the three most competitive container terminals in the Hamburg-Le Havre range?

1 st Terminal	<input type="text"/>	I. HHLA	J. HESSENATIE
2 nd Terminal	<input type="text"/>	K. EUROKAI	L. OCHZ
3 rd Terminal	<input type="text"/>	M. BLG	N. FCT
		O. ECT	P. UNIKAI