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“Competition in niche shipping markets. The case of bitumen”

Rafaela Tyri

MNSND21057

Supervisor:

Professor Ioannis Theotokas

Piraeus

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The members of the Committee were:

- Ioannis Theotokas (Supervisor)

- Ioannis Lagoudis

- Ernestos Tzannatos

The approval of the thesis by the Department of Maritime Studies of the University of Piraeus does not imply acceptance of the author's views.

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Abstract

This paper analyzes the way competition is shaped in niche shipping markets. Studying the competition is fundamental for business performance in every industry. In this paper, niche markets are defined and examples from the shipping industry are demonstrated. The strategic planning of shipping companies is examined and the competitive strategies that are formed by ship management companies, are evaluated. A case study of one niche market in the shipping industry, the transportation of bitumen in the Mediterranean and the Black Sea, is tested.

Existing literature on business competition, niche marketing, and shipping strategies, in particular, was critically reviewed and a case study was conducted for the bitumen market. The analysis argues that niche marketing is beneficial for most small scaled shipping markets. Determining the company's competitive advantage and using consolidated competitive strategies imply a strong market position. The findings indicate that the bitumen market is a demonstration of a niche market, with distinct characteristics. Companies involved in this market are present in other wet cargo or short-sea shipping markets. The inquiry claims that competition is formed primarily through cost focus strategy and secondarily through differentiation.

Keywords

Competition, niche market, shipping, bitumen

Περίληψη

Η παρούσα εργασία αναλύει τον τρόπο με τον οποίο διαμορφώνεται ο ανταγωνισμός σε εξειδικευμένες ναυτιλιακές αγορές. Η μελέτη του ανταγωνισμού είναι θεμελιώδης για την επιχειρηματική απόδοση σε κάθε κλάδο. Στην παρούσα εργασία ορίζονται οι εξειδικευμένες αγορές και παρουσιάζονται παραδείγματα από τη ναυτιλιακή βιομηχανία. Εξετάζεται ο στρατηγικός σχεδιασμός των ναυτιλιακών εταιρειών και αξιολογούνται οι ανταγωνιστικές στρατηγικές που διαμορφώνονται από τις εταιρείες διαχείρισης πλοίων. Εξετάζεται η μελέτη περίπτωσης μιας εξειδικευμένης αγοράς στη ναυτιλιακή βιομηχανία, η αυτή της μεταφοράς της ασφάλτου, στην περιοχή της Μεσογείου και της Μαύρης Θάλασσας.

Η υπάρχουσα βιβλιογραφία σχετικά με τον ανταγωνισμό των επιχειρήσεων, το εξειδικευμένο (niche) εμπόριο και ειδικότερα για ναυτιλιακές στρατηγικές, μελετήθηκε διεξοδικά και διενεργήθηκε μελέτη περίπτωσης για την αγορά ασφάλτου. Η ανάλυση αποδεικνύει ότι το εξειδικευμένο μάρκετινγκ είναι επωφελές για τις περισσότερες ναυτιλιακές αγορές μικρής κλίμακας. Ο προσδιορισμός του ανταγωνιστικού πλεονεκτήματος της επιχείρησης καθώς και η χρήση συνδυασμού ανταγωνιστικών στρατηγικών συνεπάγονται ισχυρή θέση στην αγορά. Τα ευρήματα δείχνουν ότι η αγορά της ασφάλτου αποτελεί παράδειγμα εξειδικευμένης αγοράς, με διακριτά χαρακτηριστικά. Οι εταιρείες που δραστηριοποιούνται σε αυτή την αγορά είναι παρούσες και σε άλλες ναυτιλιακές αγορές υγρού φορτίου ή μικρών αποστάσεων. Η έρευνα υποστηρίζει ότι ο ανταγωνισμός διαμορφώνεται κυρίως μέσω της στρατηγικής εστίασης στο κόστος και δευτερευόντως μέσω της διαφοροποίησης.

Λέξεις - κλειδιά:
Ανταγωνισμός, εξειδικευμένες (niche) αγορές, ναυτιλία, άσφαλτος

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1. Introduction

Competition has been a core aspect of profitable markets across the world, providing the opportunity for rivals offering the same or similar services or products, to understand their position and their customers, and increase their revenue by improving their services or products. Many authors have studied the components of successful competitive strategies, Michael Porter being the most notable. In this paper competition is analyzed in the context of the shipping sector.

The shipping industry is a diverse international sector that incorporates various types of markets, traditional and emerging, and has a set of unique characteristics. First its fully globalized character that involves complex international relations for each and every shipment. The unique nature of its production units, seagoing vessels, which are capital intense, subject to high risks due to weather and sometimes dangerous cargoes, and are in need of exceptionally high safety standards and constant maintenance, is indicative of the rare industry conditions. Moreover, the plethora of cargoes, routes and vessel sizes create a vast framework of individual markets at different levels of maturity. This paper attempts to dissect into shipping strategies and examine the way competition is formulated within the industry. In particular, the paper is focusing on competition strategies for niche shipping markets, and the case of one niche is analyzed, the transportation of the commodity of bitumen.

In the methodology chapter, the main research questions are analyzed and the method used for this thesis, which is critical literature review accompanied by a case study, are justified. In the third chapter, the term niche market is defined with the use of current theory and its core characteristics are outlined. The main advantages and disadvantages of niches are explained and the theory is combined with the literature and tested in the context of shipping. The fourth chapter is referring to the strategic planning of shipping companies. The five forces that shape strategies are analyzed for a markets external environment and enriched using examples retrieved from shipping. Moreover, additional factors that affect the strategies of the sector are also considered. In the fifth chapter of this paper, the elements of strategies and tools used for attaining competitive advantage are thoroughly examined. First, the internal strategic tools and theories that define a company's competencies are studied. The main competitive strategies are also defined in this chapter. Competitive advantage in shipping is also examined through the literature and models that are presented above.

In the following chapter of this paper, a case study is conducted for market of transportation of one specialized cargo, liquified bitumen. The commodity is being presented, its demand and supply especially for the Mediterranean region is analyzed and the businesses that are active in that sector as well as the strategies which are in place, are further analyzed.

Finally, conclusions to this study are drawn in the last chapter, and the limitations of the study are briefly outlined. This thesis will complement the existing academic work on competition and niche marketing. Existing literature for the shipping sector is primarily focusing on strategy and competition in the sector of liner shipping, which has different characteristics and level of concentration than the tramp shipping. Strategies of niche markets for this context have not been thoroughly studied which this paper will endeavor to enrich. Moreover, the case study dedicated to the transportation of bitumen through sea freight, is aspiring to contribute to the limited literature which is currently available on this topic.

2. Methodology

2.1. Research questions

Competition between shipping companies in niche markets is the topic of this paper. Considering that research on strategies and competition within the shipping industry has not been widely studied, especially for the non-fixed routing (tramp) shipping services, this paper aims to examine which of the strategy and competition theories are applicable to shipping companies. Moreover, the concept of niche markets is being tested in the shipping industry, and consequently, competition in niche shipping markets is examined. Therefore, the rationale behind this study is to examine the association of strategy and competition theory in niche shipping markets and in particular test this concept in the bitumen trade. The research questions that have been set for this study are:

(1) To examine the ways in which niche markets occur in the shipping industry, and provide relevant examples;

(2) To analyze how the competition is formed between shipping companies in niche markets and establish the competitive strategies that are primarily used; and

(3) To identify the characteristics of the bitumen market, to determine whether it consists a niche, and to analyze the way strategy and competition are developed within that sector.

2.2. Literature review

The thesis is based on qualitative data. Qualitative data, which may occur by many research approaches, are non-numeric data that have not been computed (Saunders et al, 2009). The collection of such data was preferred in this paper, as the appropriate tool to conceptualize existing theory in a new business environment. Even though the collection, analysis, and classification of qualitative data are complex, it is a widely used source of research in business theory. The primary methodology used in this paper is a critical literature review. Literature review is a research method that capitalizes the existing literature in order to collect, combine and create new knowledge or expand the existing knowledge of a topic. It is a very efficient method to conduct research on the business field and to portray the aspects that need to be further studied (Snyder, 2019). Aiming to expand the knowledge of competition and strategy and transfer it to the environment of the shipping industry, led to the selection of an integrative literature review. An integrative review is based on the creation of new theories and expansion of current theories, based on the collection and synthesis of some parts of the existing literature. Therefore, even though this paper has not considered the entirety of strategy and competition literature, various articles and books by accredited authors have been combined in an attempt to fill the current gap in studying competition between niche shipping markets. A deductive approach has been followed since the theoretical framework was first developed and subsequently tested using available data. For the purposes of this paper, the topic was assimilated, the literature was thoroughly reviewed and personal notes were taken. Following, the main concepts and common patterns in the theory were identified. The grounded theory about competition and strategy that is provided in the literature was compared and combined and afterward conveyed to the shipping industry, where it was examined.

2.3. Case Study

For the second part of this paper, a case study on one niche market, the market that has evolved around the transportation of bitumen, has been selected as the preferred research method. A case study is an empirical study that examines a current phenomenon within its context. Case study has been widely used as an approach to expand knowledge on individual, group, organizational, social, political, and related phenomena. (Yin, 2009). In this paper, case study has been selected as the most appropriate method to review and analyze a market within the shipping industry, taking into consideration not only its components but also its external environment. Another reason for selecting a case study is the contemporary character of the research, which also applies in this paper, where the analysis of the bitumen sector refers to recent data. The purpose of this case study is to identify the elements of bitumen transportation, the units to be analyzed, and the reasoning between the theories stated in the first part of the paper and the application of such theory in an actual business niche. The results of the case study have been tested for construct validity, as there has been adequate evidence for the interpretation of the theory and concepts introduced and also tested for reliability; however, they have not been tested for external validity, meaning that the results cannot be generalized for other markets, nor for internal validity, as it is not verified that all variables affecting the results have been taken into consideration (Yin, 2009). Upon thorough examination of the objectives of this thesis, the combination of literature review and case study has been selected as the most suitable method leading to factual results. Literature review, based on the work of valuable business theorists such as Michael Porter, Henry Mintzberg, and Philip Kotler, the applications in shipping strategy by Peter Lorange but also recent academic work, has constructed the framework which was subsequently adapted to the distinctive and unique features of the shipping industry. Such adaptation was illustrated more effectively through an example that was analyzed through a case study, which induced substantial outcomes.

3. Niche markets in the shipping industry

3.1. Characteristics of niche markets

For this paper, the concept of niche market will be tested in international markets and the shipping industry in particular. Taking into consideration the above, the term niche needs to be defined before all else. According to the Oxford English Dictionary, a niche market is "a small, specialized market for a particular product or service." In academic literature, there has not been one concise term, but the most prominent definitions will follow. Dalgic and Leeuw (1994) characterize it as "a market constituted of a customer or a group of customers with mutual needs", placing the size and type of customers as a fundamental characteristic of niche markets. According to Kotler (2003), niche is a particular customer group aiming to acquire the unique benefits of a market segment. Based on the above definitions, even though not all are similar, it can be considered that there are a series of characteristics comprising a niche.

3.1.1. The size of niche markets

The first characteristic is the small size of the market. Most descriptions of a niche market mention its narrow size as a prominent characteristic; therefore, it is safe to assume that a niche is a comparably small market. On the other hand, the size of the niche market needs to be adequate to generate profit and also have the capacity to grow further (Shani and Chalasani, 1992). The prevailing view of niche markets as smaller markets, however, is not implying that the companies which are active in those markets are equally of small size. As reported by Philip Kotler (2003), a company dominating a niche market is not necessarily a lesser one. There are examples of companies that dominate an explicit market on an international level while earning a significant profit. According to Dalgic and Leeuw (1994), a majority of successful medium sized companies are active in niche markets. Large companies may also benefit from niche markets; however, it is argued that their smaller-sized counterparts, might be more targeted and hence more effective in smaller markets (Dalgic and Leeuw, 1994).

3.1.2. Market segmentation

The second characteristic of a niche market is segmentation. Market segmentation either by creating segments that offer new addition of customers or by exchanging the present customers is a widely used strategy amongst adept marketers. (Doyle and Stern, 2006). The difference, however, between segmentation and niching has been studied by many authors. Shani and Chalasani (1992), depict the differences between the two by analyzing their approaches. Segmentation is formulated by separating sections of the mass market into smaller ones, making it a top-down method.

Focusing on the differences between each market segment, the goal of segmentation is to split the market into parts that are simpler to define and handle. On the contrary, niche marketing is beginning from fulfilling the demands of a limited portion of customers and progressively expands to a larger portion of customers, hence is a bottom-up method. The niche market is aiming to compile the similarities in customer needs, by emphasizing consumption motifs that form a customer group. The third characteristic of niche markets, as occurred in the previous paragraph, is the primary focus on customer needs. The importance of comprehending and serving the needs of customers is evident in the literature. A player that is attentive to their customers' needs will own a market since competitors are reluctant to enter a market with not enough volume for two players (Kotler, 2003).

3.1.3. Customer relationships

The following characteristic is the significance of relationships and tradition (Toften and Hammervoll, 2008) in marketing strategy. Focusing on customer relationships that are consistent and stable, is crucial for the collection of information used by companies in niche markets in order to stay adaptable (Toften and Hammervoll, 2010). Strong customer orientation offers various benefits and reduces the issues arising in product-oriented companies.

3.1.4. High value of product or service

Companies in niche markets are offering a high value in their products or services (Dalgic and Leeuw, 1994) it is therefore common that companies are usually charging a premium for this added value. Customers are known to be willing to pay a premium to a firm that covers their needs satisfactorily. Therefore, even though the volume of products or services is relatively low due to the small size which is already mentioned, the profit margins in niche marketing are high due to the additional premium charged.

3.1.5. Attraction to competitors

Another characteristic of a niche market is the tendency to not attract competitors. There are usually not enough customers or resources to capitalize, hence the interest to enter is low. Competitors will avoid a niche where there is not adequate profit (Kotler, 2003). However, specialized markets should have sufficient size and the potential for growth to follow a successful niche strategy.

3.2. Benefits and possible downfall of niche marketing

Having defined what comprises a specialized market, the benefits of pursuing a successful niche marketing strategy are further defined. Pursuing niche marketing results, among others, in notable growth possibilities, value creation, increased sales and profit, customer retention, increased competitiveness, as well as some degree of protection. Literature shows that a specialized marketing strategy can be an ideal option for a small specialized firm (Toften and Hammervoll, 2008). The superior quality of the products or services produced by these firms and the long-term valuable customer relationships are the basic characteristics that lead to successful marketing. Customer specialization has been highlighted as one of the top characteristics that lead to high performance. By taking into consideration the long-term benefits of their customers, companies in niche markets are able to sustain long term customer relationships (Dalgic and Leeuw, 1994).

A deep understanding of a company's position within a market can be indicative of the strategy that will follow. Companies with a low competitive advantage and unstable position within a market see products as commodities and are more likely to exit a market. On the other hand, a leading company that is steady According to studies, there are two different types of strategy within a market segment that can lead to a successful share of the market and profit. The first strategy includes offering high-quality products or services. Extraordinary quality or performance that is high above the competition may offer superior customer satisfaction to a small segment of customers with these types of needs. On the contrary, another strategy followed by small firms that operate in a small market segment is to offer products or services at lower prices than their rivals. This strategic choice may benefit smaller companies that can compete with multinational firms as they have fewer resources and simpler procedures to follow.

Some of the ways to increase profit while competing in a niche are firstly to sell more within this niche by occupying a bigger percentage of the market. Another choice includes finding extended customers in the niche or locating new niches. The analysis of one company's strengths and core competencies identifying the customers and classifying them into majors and minors can help in the market analysis. The identification of the differences between the products offered compared to their competitors and identification of any improvement or alterations that may be available. Understanding of her value to customers and the true needs of customers. Any differentiation in the product that can attract your customer segment. Understanding of trends and changes in the market and the global economy that affects customer needs. A company is in a position to adopt a niche marketing approach when it can provide products or services that are of higher quality or have better resources than its competitors, or when it can use its resources more efficiently to produce more at a lower cost. Niche firms frequently experience a lack of information or human and capital resources (Toften and Hammervoll, 2008), however, sometimes use such resources efficiently to find a profitable position and to stay competitive in the marketplace. When a company avoids competing with its large competitors and addresses a big customer group, it is optimal to devote its resources to a more distinct market. This choice can be ideal also for companies that have the opportunity or know-how for a very specific product or service and they can enhance this opportunity by focusing only on that particular service. There have been positive results associated with niche marketing on an international level (Dalgic and Leeuw, 1994). Nevertheless, niche marketing can also be the only opportunity for the survival of a company. This strategy can also be used for penetration of large markets or existing market segments. As mentioned by the researchers, a potential downfall of niche marketing is selecting a market segment that is too small and narrow for generating profit (Dalgic and Leeuw, 1994). This can be countered by joining multiple niches at the same time. It is once again highlighted that the advantage of this type of marketing is largely based on continuous and stable customer relationships.

3.3. Niche markets in the shipping industry

Within the shipping industry, there are multiple examples of segmented markets that follow characteristics analyzed in the previous section. A large portion of those maritime niches can be found in liner transportation such as feeder services or Ro/Ro vessels between specific ports. This specialization can be depicted either by a specialized cargo, route, or type of vessel. Twin deckers are one example of a type of that has the ability to carry mixed cargo in bulk form and is considered specialized since it is predominantly used in routes between Oceania and Southeast Asia (Stopford, 2009). Passenger shipping and especially cruising can also be considered a highly specialized form of shipping as it is particularly concentrated among a few large players. Tramp shipping also has a few examples of specialized cargoes formulating niche markets, some of which are industrial chemicals, wine, and liquified petroleum gas (LPG) (Lorange, 2005). Another example lies in the shipbuilding sector, where particular shipyards have been reported to specialize in building a specific size and type of vessel. These vessels might be of less demand; however, they are usually of higher value and are designed for a small group of customers. This has been reported in European shipyards, which build a less significant volume of ships, compared to Far East shipyards, but still have had the chance to specialize in a few types of vessels such as cruise ships, small tankers, and specialized purpose vessels as dredgers (Stopford, 2009).

Niche shipping companies are usually smaller in size and may be in the position to facilitate quick decision making processes compared to large organizations with more complex internal communications. (Lorange, 2005). This fact, accompanied by the clear market focus of niche companies is an advantage against the complexity that results from high concentration observed in shipping. However, strategic niches tend to be more short-termed, as they can be finally imitated by other companies and subsequently be transformed to commodity strategies (Lorange, 2005).

4. Strategic Planning of shipping companies

4.1. The five strategy shaping forces in shipping

Business strategy has been the primary focus of management professors and researchers, as a concept that encompasses the structure, processes, and decisions that lead to a company's vision. A company's strategy can be described as the composition of core decisions that determine the market value and the long-term goals of that company, its ways of creating and maintaining its competitiveness, as well as its internal organization and procedures. The global aspect of the shipping industry leads to the adoption of business strategies developed to target competition in the international marketplace and can be characterized as global strategies (Lasserre, 2003). Moreover, strategy is defined by Porter as the formulation of one particular position, associated with a unique combination of activities. However, even if there is more than one position a company can choose from, it is the selection of one unique set of activities that are distinct from their competition that leads to a powerful strategic position.

According to Mintzberg, strategy can be defined through 5 different approaches: a plan, ploy, pattern, position, and perspective. Planning is one of the first and essential parts of creating a strategy, through various planning methods. However, on its own, planning is not sufficient to create a strategy. Plotting against one's competitors is another aspect of strategy creation. Even though planning and plotting are intentional practices, there is a part of the strategy that is unintentional and incurred from the preexisting organizational behavior, which is described as a pattern. Strategy can also be determined as a company's position within a market, and outline the organization's competitive advantage in relation to its environment. The last approach refers to the organization's perspective, meaning the impact of the organization's culture and way of thinking in the shaping of its strategy. Deciding on a strategy requires adept knowledge of the competition. Understanding the characteristics of competition within an industry is facilitated by the analysis of the 5 competitive forces studied by Michael Porter. Through studying the competitive forces, companies are able to comprehend their market position and assess their rivals and modes of operation, which may eventually result in selecting a better-fitting strategy, leading them to higher profit.

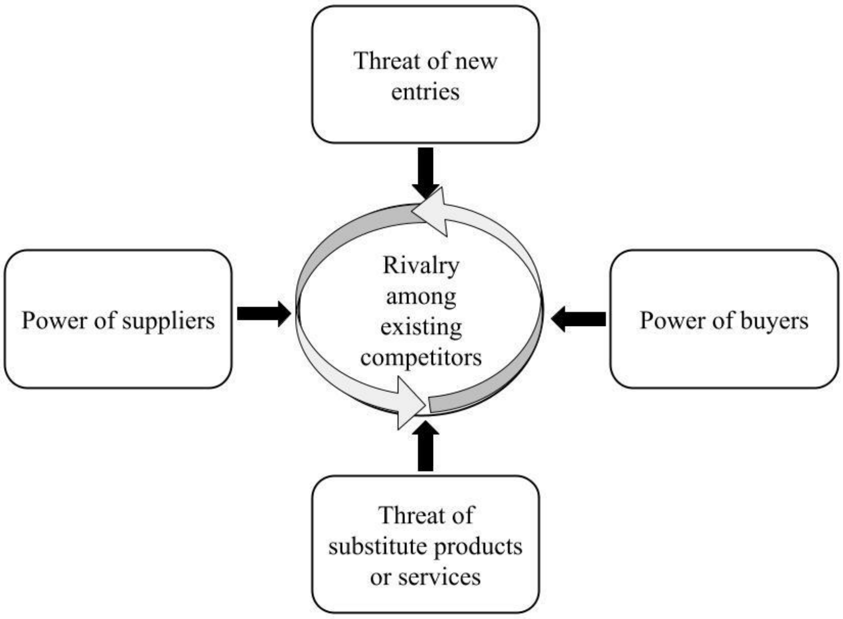

Figure 1. Porter's five forces shaping strategy (Porter, 2008)

4.1.1. Threat of new entry

In the following segment, Porter's five forces forming competition are first analyzed and then examined for their applicability in shipping using substantiated examples from the industry. The first force analyzed in this chapter is the threat of a new entry. New entrants tend to use new resources in order to acquire a portion of the market, which eventually lead to cost and price increase. The threat of new entries is based on the existing barriers to entering a market. A high threat of entry is equal to minimal entry barriers which require prices to stay at low levels or companies to invest largely in order to gain a competitive advantage. The barriers to entry can be referred to as benefits held by the existing players of a market compared to those who are willing to enter. Some of the most common entry barriers are supply-side economies of scale, demand-side benefits of scale, customer switching costs, capital requirements, incumbency advantages are independent of size, unequal access to distribution channels, and restrictive government policy. In the shipping industry, there are multiple barriers for new companies to enter the market. The most important barrier is the high capital intensity that is required in order to build, purchase, or even manage a vessel. Moreover, the extraordinary number of policies and regulations that are in force, require an established shipping management company with an approved safety management system and vessels that are fully equipped and manned according to the pillars of the International Maritime Organization (IMO), contributing to the limitation of the entrance. Another factor restraining entrance is the existent economies of scale, not only from the side of the ship-owning or managing companies but also large-scale benefits from the demand side that cannot be achieved from a new entrant in the industry. For instance, large oil companies like Shell or BP are less likely to charter a vessel from a single owning tanker company but will proceed more confidently to charter a vessel from a large, well-known shipping company. The nature of the prospective entrants and the capacity that they have available is determinant of the magnitude of the threat. Competing firms might vary from startup companies to foreign companies or entrants that are already established in a related industry. Within shipping, an example of the new entrants as managers or managing companies could be investors in shipping companies, startups, traders, agents or charterers acquiring their own managing fleet, or ship-owners already established in different types or sizes of vessels.

4.1.2. The power of suppliers

The power of suppliers is also a considerable element of competition. By setting higher prices, limiting the quality of their products or services, or transferring costs to other market participants, strong suppliers are able to keep a larger portion of the value for themselves (Porter, 2008). An industry that is unable to incorporate cost increases to its own prices is experiencing narrow profitability due to strong suppliers. Suppliers are firstly considered powerful if they are more robust than the industry deemed as their customers. The supplier group's revenue that is allocated to more industries is more powerful, as it will claim higher earnings from all the industries involved, whereas if largely focused on one industry, they are more likely to preserve it by charging fair pricing, investing in new technologies and creating a powerful network (Porter, 2008). For example, large shipbuilding companies or engine manufacturers, who are considered suppliers to shipowners, produce a wide range of heavy equipment destined not only for marine use but also for automobiles, energy, or construction industries, such as Mitsubishi Heavy Industries, Hyundai Heavy Industries, and Samsung Heavy Industries. When shifting suppliers, industry participants are challenged with switching costs. Switching suppliers might be challenging for businesses that have made significant investments, for instance, a shipping company whose deck officers are all certified for the use of a specific Electronic Chart Display and Information System (ECDIS), is more likely to equip their new acquisitions with the same type and brand ECDIS. Differentiated products and services are also contributing to strong suppliers or the absence of substitutes for the products or services of the supplier. The International Group of P&I Clubs, for instance, accommodates P&I liability coverage for almost 90% of ocean-going tonnage worldwide. Lastly, the supplier group can threaten to advance its integration into the sector of its customers.

4.1.3. The power of buyers

There are multiple groups of buyers that are in a position to exercise their influence in an industry’s competition, known as the power of buyers. By reducing prices, demanding higher quality or more services, which lead to increased costs, and generally competing industry members against one another, powerful customers might capture more value at the expense of the sector's profitability. Buyers are considered strong if they have negotiation power over other market players, especially if they are price- conscious and use their influence largely to force price reductions. This force is particularly evident in some shipping sectors, where a few charterers dominate the market. Also, it is common that a single charterer might charter a large volume from one company, for example through long time charter or multiple vessels at the same time. This is more noticeable in industries with significantly high fixed costs, such as LNG vessels, where larger volume customers are very potent. The liner shipping industry is a great example of powerful buyers with the three shipping alliances (2M, THE Alliance and Ocean Alliance) taking up to 80% of the global container market. A great level of standardization in the industry’s products or services, which is also occurring in shipping as most vessels of the same size and type have little difference in the services offered, is amplifying the power of the customers, who since they are capable of using similar services, are more likely to switch to a different vendor, a shipping company managing same sized vessels with minimal switching costs, a core characteristic of the spot freight market. Moreover, the ability of a customer to pressure their vendors to offer the product or service themselves is considered a characteristic of a forceful customer. In the shipping industry, it is very common for major charterers to own and manage their own fleet, allowing them the opportunity to purchase more vessels for operating themselves at a high market.

4.1.4 The threat of substitutes

The threat of substitutes is the following force impacting competition. A substitute product or service is one that employs a different method to attain an equivalent or similar objective. It's possible for a substitute to replace a buyer industry's output, in which case there is an indirect threat of substitution (Porter, 2008). Other means of transport, such as railways and air freight for containerized cargoes, and pipelines for liquid cargoes, may be considered substitutes for shipping services. An essential threat of substitutes is present where substitutes offer an inviting exchange between price and performance for the industry's product. A greater value of the substitute leads to less profit potential for the industry. Even though air transportation is considerably faster and has dominated passenger transportation, commercial shipping still holds more than 80% of the trade globally (UNCTAD, 2022), making seaborne transportation the most effective means. If replacing a service with a substitute bears a low cost for the customer, they are more likely to move to substitutes, making the threat more powerful. One might consider the alteration in other industries that can create new substitutes that were not existing previously.

4.1.5. Competition with rivals

The final force shaping an industry’s competition is the competition with existing rivals, which can be expressed by price reductions, the launch of new products, marketing campaigns, and service upgrades. Even though the healthy competition is essential for increasing revenue, the profitability of an industry is constrained by intense competition. Two factors that are taken into consideration for determining the effects on profit potential are the level of intensity in competition among businesses and the grounds on which they compete. High intensity of competition can be present in numerous instances such as with the existence of rivals that are similar in their capacity accompanied by the absence of a market leader. In tramp shipping, and the dry bulk sector in particular, there are multiple ship-owning companies with comparable market share and the competition is high. A low growth rate of the industry is also indicative of market share conflict. According to the Review On Maritime Transport issued by the United Nations Conference on Trade and Development (UNCTAD), the estimated seaborne trade growth for the period of 2023 to 2027, is expected at an annual average of 2.1 percent, which is a moderate rate, slower than the last three decades average calculated at 3.3 percent. The concept of grand exit barriers due to high specialization of assets, such as managing a fleet of LNG vessels during low LNG transportation demand, has the tendency to keep the rivals in the market with low or zero profits, not allowing the demand to match the supply. Other factors affecting rivalry are the aspirations of industry participants to lead a market outside the limits of economic performance, for example, industry leaders on decarbonization such as Maersk are highly committed to their climate goals. Finally, there are companies that do not share the same vision with their rivals, being unable to understand and interpret their tactics.

4.2. Additional factors affecting strategy

4.2.1. Growth rate of the shipping industry

The forces that were previously analyzed as shaping factors for strategies of an industry, are complemented by a few additional elements affecting strategy in a more indirect way. The growth rate, the level of existing and upcoming technology, and the regulatory framework of one market are indicative of the formation of competition within that market. The growth rate of global seaborne trade, which was previously discussed, is calculated at 3.2 percent in 2021 with a total of shipments of 11 billion tons according to UNCTAD. Moreover, the global commercial fleet reached a growth of 2.95% in DWT which is a relatively low growth rate for the last decades (UNCTAD, 2022). The most notable increase was observed in liquefied gas carriers as a result of the global demand for gas. Studying the indicators of growth for shipping, the average age of ships should be taken into consideration. Calculated by the sum of ships, the average age for 2021 is almost 22 years while the average age according to carrying capacity is 11.5 years (UNCTAD, 2022). The uncertainty in the forthcoming evolution of fuels is characterized as one of the main causes for low ordering numbers along with high newbuilding prices (UNCTAD, 2022).

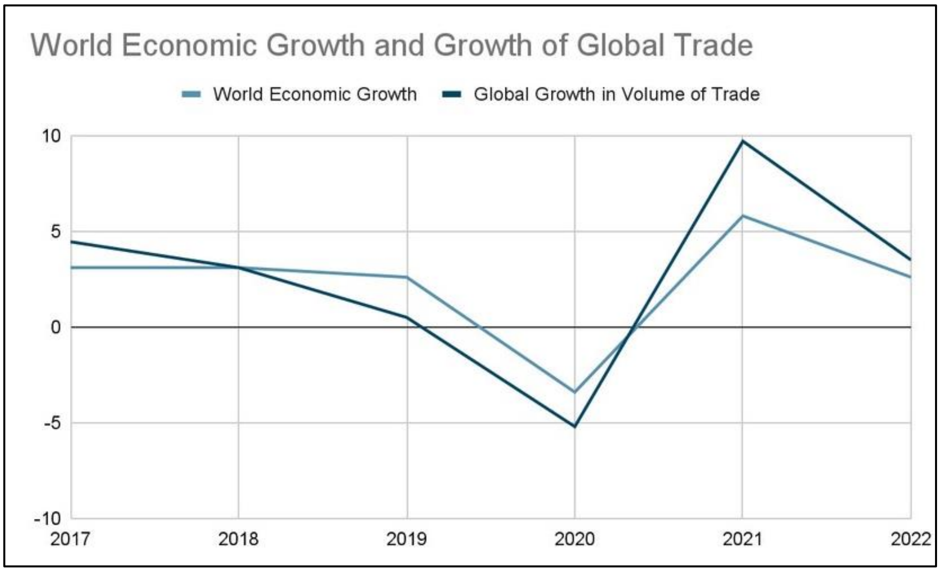

Figure 2. World economic growth versus growth of global trade (UNCTAD, 2020-2022)

4.2.2. Technology and innovation

Technology and innovative solutions available for use are also affecting competitive strategy in shipping. Digitalization and its applications in shipping have been key trends in all aspects of the shipping industry. Likewise, new propulsion technology and alternative marine fuels such as methanol, hydrogen, ammonia, and LNG, are being tested as there is a high probability that carbon fuels will not be dominating marine propulsion in the upcoming decades, even though their current cost does not allow them to be used widely. Energy efficiency optimization, cost-effectiveness through automation, and blockchain technologies for swift and safe exchanges are considered priorities for maritime innovation.

4.2.3. Regulatory framework

A major aspect of the way shipping businesses have been organized and developed, derives from the regulatory framework which rules the maritime industry. The International Maritime Organization, governmental bodies such as the European Union, the International Labor Organization, and other regulatory organizations of the industry set the industry's high-performance standards and initiate the trends for the sector. It is also common that industry leaders like Maersk, are setting the standards for the whole industry by targeting higher than the regulators. IMO is utilizing the international conventions which are constantly amended to adjust to global trends. Latest trends in the industry, presently, include decarbonization, advancement of e-commerce, digitalization, and transformation of the supply chain system and values.

Due to the gradual changes and adjustments that affect the maritime structure, competitive pressures are not stable over time. The profitability of an industry is directly impacted by this change. Both the complimentary elements and the five competitive forces are not stable over time. The shipping industry, in particular, operates in an environment that is always changing and subject to economic cycles (Stopford, 2009), which has an impact on many forces. Even though the forces are a good indicator for a company to capitalize on for gaining knowledge of the maritime industry, it is the comprehension of the shipping cycles and the realization that continuous change and instability can be used to the company's benefit that has led to successful shipping strategies (Lorange, 2005).

5. Competition among shipping companies

5.1. Internal strategic tools for comparative advantage

5.1.1. Resource based theory

The maritime industry is characterized by intense competition; however, it can be argued that successful strategies in the sector are not solely driven by its external environment which was presented in the previous chapter with the assistance of Porter's forces and the external analysis. It has been suggested that successful strategies can also derive from the internal environment of a company; therefore, certain tools have been developed to expedite internal strategic analysis. The resource-based theory of competitive advantage, value chain, and benchmarking are the tools that will be further analyzed. Understanding the relationship between resources' capabilities, competitive advantage, and profitability, along with considering a method to maintain a business's competitive advantage are the basic elements of the resource-based approach to strategy. This method has established resources and competencies as the foundation for developing a firm's strategy, and on which it builds its identity. (Grant, 1991). The resources include capital and human resources, systems, and intangible resources. For a ship management company, resources can be expressed as vessels, human capital consisting of crew members and shore personnel, systems in place such as the Safety Management System of the company, ideas, and brand recognition. Understanding a company's unique resources leads to the establishment of fundamental capabilities, which might be exclusive and form a unique combination of resources that are hard to mimic by competitors and subsequently offer a comparative advantage to the firm. These core competencies are considered imperative for the sustainability of competitive advantage (Papadakis, 2016). A business analysis framework that has been used for analyzing a company's internal environment and identifying its core competencies is the VRIO (Value, Rarity, Imitability, Organized) business analysis framework, conceived by Jay Barney in 1991. The framework implies an evaluation of a company's resources for their value, rarity, and imitability and also examines whether a company is organized to exploit those resources. Those resources and capabilities that satisfy every characteristic are indicating sustainability for the comparative advantage.

5.1.2. Value Chain model

Value chain analysis is a business model used for internal evaluation, aiming to transform a product or service from an idea to reality. The value chain is capitalized to create a competitive advantage for a company by increasing productivity while keeping costs reasonable (Porter, 1985). It has been argued as the most efficient method for a business to achieve a comparative advantage. A company's functions are categorized into two groups, the main and the supportive functions. Inbound logistics operations, outbound logistics operations, marketing, and sales services are considered the main functions whereas supportive functions include supplies, research and development, human resources management, and internal structure. In a shipping company, the main functions are chartering, operations, and technical, whereas supplementary functions involve crew management, insurance, and financial and human resources. It is common for shipping companies to outsource some of these functions, however, it is through vertical integration that a company is able to improve performance, by owning a large part of the value chain. Even though there are leaders in the shipping industry representing both vertical integrations, especially in the liner market, and outsourcing, it has been argued that despite complex internal relationships, vertical integration is creating higher value for their customers. On the contrary, outsourcing has been proven to have immense economic benefits and contributes to a company’s efficiency by lowering the cost of production (Panayides and Cullinane, 2002).

5.1.3. Benchmarking

The following internal analysis framework considered is benchmarking, which is the standardization and the constant comparison of a business and its strategies, operations, and processes with those of its rivals or the leaders of their industry (Papadakis, 2016). As part of strategic planning, benchmarking can be either an external analysis measuring the difference between the benchmarking and the company’s objectives and an internal analysis for determining the core competencies of the company itself (Chen, 2005). New technologies and the global trends for data analysis and digitalization, benefit the benchmarking process. In the shipping sector, various tools such as Key Performance Indicators (KPIs), Tanker Management Self-Assessment (TMSA) for liquid bulk cargoes, and other indices amplify benchmarking.

5.2. Competitive advantage in the shipping industry

Understanding the core competencies of a shipping company is the base for identifying its competitive strategies. The main competitive strategies used for gaining and maintaining competitive advantage in a market are examined below. Competitive strategy is referred to as the pursuit of a favorable competitive position within an industry. Establishing a profitable and long-lasting stance against the forces affecting industry rivalry is the essence of competitive strategy (Porter, 1985). Creating a competitive strategy essentially contains the creation of a general formula of the ways that a corporation will compete, what its objectives should be, and what regulations would be required to achieve those objectives.

5.2.1. Cost Leadership

Cost leadership is the most evident strategy, as it implies a business aspiring to produce at a low cost in its sector. The company's cost advantage is usually linked to its large scale, often covering a wide range of business segments, and may even operate in related industries (Porter, 1985). Cost advantage can derive from diverse sources and is affected by the industry in which the business operates. Third-party management companies, for instance, managing large fleets such as V Ships are able to offer a lower cost of transportation by utilizing their large scale to save costs on crew management, purchasing, and technical management. To achieve economies of scale, businesses benefit from proprietary technology and access to reasonably priced resources.

5.2.2. Differentiation

Differentiation is the second generic marketing tactic. In a differentiation strategy, a company aims to stand out from the competition in specific areas that are highly appreciated by customers. One or more characteristics that are deemed crucial by its customers are selected, aiming to satisfy customer needs, while a premium price is charged in recognition of its originality. Being distinctive is important in competitive strategy. It entails purposefully deciding on a different set of activities to give a special combination of values (Porter, 1996). Each industry has its own unique ways of differentiating. Differentiation can be made on the basis of the product itself, the method of delivery used for sales, the marketing strategy, and a wide range of other elements. Differentiation strategies are used by shipping companies involved in the transportation of more segmented cargoes, like chemicals, or services from liner companies such as the early adoption of blockchain technologies.

5.2.3. Focus on differentiation and cost

Focus, which is the latter competitive strategy, suggests concentrating a company's focus on a minor area of competition within a given sector. Businesses following this particular strategy, operate in a segment or a set of segments within the market and adjust their approach to cater to them exclusively (Porter,1985). Even though competitors are lacking competitive advantage over all other competitors, they strive to gain one by tailoring their strategy for the target segments. All shipping companies specializing in one or two primary cargoes and vessel sizes are capitalizing on the focus strategy. However, focus strategy can be divided into two separate competitive strategies, focus on differentiation and cost. While a corporation wants differentiation in its target segment when differentiation is the focus, cost focus seeks a cost advantage in the selected target segment. Both variations of the focus strategy are based on distinctions between the target segments of a focuser and other industry sectors.

Despite the idea that it is believed unattainable to maintain a successful cost strategy and differentiation strategy at the same time, modern technology tools aim to cover the gap between these competitive strategies and assist businesses to maintain their competitive advantage by using both strategies concurrently. Enterprise Resource Planning (ERP) systems, strong relationships with the suppliers, standardization of the processes, and adoption of a total quality management system are some of the methods used by businesses to increase their differentiation degree while decreasing their costs (Papadakis, 2016). Even though according to Porter a business should aim its attention on one competitive strategy only, other theorists support that the company may strive to maintain a satisfactory level on two or three strategies at the same time, which is also associated with higher performance (Panayides, 2003), however, it will be futile to attempt to prosper to more than two.

5.3. Competition in the shipping industry

Internal analysis for identifying the competitive advantage in the context of the Greek shipping industry was studied through a model of four dimensions, namely service, quality, cost, and cycle time (Lagoudis and Theotokas, 2007). Another study focused on the maritime sector, analyzed the positive relationship between pursuing competitive strategies and higher performance (Panayides, 2003). In particular, findings implied a substantial positive correlation between performance and absolute cost advantage. Even though lowering the cost is not necessarily the sole approach to accomplish competitiveness, as all shipping companies seek to be competitive pricing-wise, cost efficiency is significant for the success of businesses along with economies of scale (Panayides, 2003). Nonetheless, an even greater impact is recorded through a combination of scale economies and differentiation, which had been argued in the past as ineffective. According to the findings of Panayides (2005), focus strategy is connected to performance, at a much lower degree, however, compared to other competitive strategies or combinations of them. This is especially true for larger companies, especially companies in the bulk sector, which primarily adopt cost-reduction strategies (Lagoudis and Theotokas, 2007), whereas companies of smaller size, dominating a well-defined, niche market may depend on the variation of focus strategy on differentiation with success. It is argued that adept market knowledge and analysis, are crucial for performing in the turbulence of the shipping environment (Lorange, 2005). Moreover, market-oriented businesses are in the position to examine their customers' needs and are able to control their segment using their core competencies (Panayides, 2003). Tanker and specialized cargo management companies that are diversified, are more aware of the market and the overall supply chain and prioritize customer relations by adjusting to their charterers' needs, such as high safety standards (Lagoudis and Theotokas, 2007). Furthermore, within the ship management context, competitor orientation also noted a substantial impact on the effectiveness of a business. The findings conclude that the consolidation of market and competitor orientation, with service differentiation, is far more successful for shipping companies than a cost leadership approach on its own (Panayides, 2003).

Another theoretical framework for the strategic analysis of the shipping sector is presented by Lorange (2005). This framework depicts the relationship between market knowledge and the level of expertise. Both classic shipping markets such as the dry and liquid bulk sector, and containerships, as well as emerging markets of new, specialized cargoes, can be placed on this framework. The horizontal axis represents the expertise of a company and the vertical axis displays new initiatives that shipping businesses can implement, such as new ways of marketing or new customers, and innovative technology. The first category, named "Protect and extend" refers to established businesses mainly with commodity strategy, and require adept market contacts and know-how and capable businesses. The "Leverage" strategy involves already successful strategies in new shipping markets. The "Built" strategy is complementing an already successful strategy that was developed under Protect and Extend, with new technologies. "Transform" business refers to adopting new technologies and a new market segment at once, which is considered high risk and is correlated with failing (Lorange, 2005).

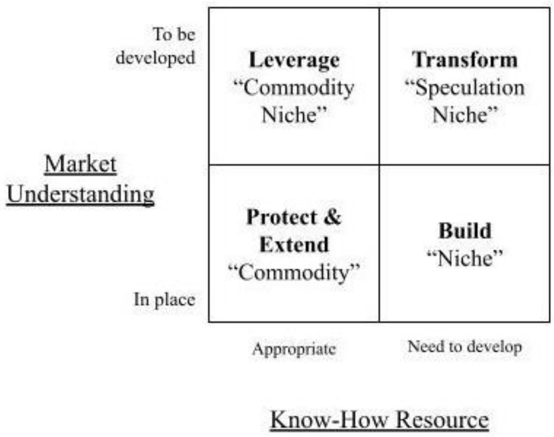

Figure 3. A conceptual model for shipping strategies (Lorange, 2005)

6. The bitumen market: Competition of shipping companies in the bitumen market

6.1. Bitumen as a commodity

In the following section of this paper, a case study of the competition in the maritime transportation of the commodity of bitumen will be analyzed. Bitumen is a liquid or semi-solid substance with high viscosity that is either produced through petroleum distillation or incurred naturally and is used in the construction industry. In particular, this product due to its adhesive properties is primarily used for road paving and is also used in manufacturing as a waterproofing or adhesive agent. Cost and durability are the main issues considered for its paving use. Bitumen is the binding agent which is blended with aggregate particles to create asphalt which is subsequently used to pave roads. It is preferred worldwide for paving due to its structural durability, economic production, and maintenance as well as versatility in its applications. Asphalt is also utilizing its black color to clear the roads from snow and water during heavy weather and is also recyclable as it can melt again to provide new roads. An alternative to asphalt is concrete, which is considered longer lasting but also less effective, since it is either slippery or not smooth enough and also it is more expensive in its installation and repair.

The price of bitumen as a commodity is heavily dependent on the same factors that are also affecting the price of crude oil since bitumen is mostly a byproduct of crude. During the refining process, lighter crude oil components are removed and bitumen, which is heavier, occurs. The price of bitumen, therefore, is subject to crude oil production worldwide, as it is formed through the supply and demand of oil and is widely affected by geopolitical status. Crude oil price is affected by multiple factors such as the global production of crude, the various market shocks, the production of US shale oil, and decisions of the Organization of the Petroleum Exporting Countries (OPEC). The growth of new forms of energy as well as fluctuations in the global economy are also important factors in crude production and pricing (Lu et al, 2020). During the last years, the price of crude oil was highly impacted by the crisis of Covid-19 but also it was agitated due to the Russian invasion of Ukraine. Russia, one of the most important oil producers globally, has recently been sanctioned for crude oil exports (from 5 December 2022) and refined petroleum products (from 5 February 2023), leading to imbalances in the oil supply. Historically, bitumen price is correlated with the price of High-Sulfur Fuel Oil (HSFO) and is estimated to be at a discount of around $40/t, up to a premium of $60/t on top of HSFO.

6.2. Bitumen supply and demand in the Europe, Black Sea and Mediterranean region

The average global supply of bitumen from 2015 to 2020 is estimated to be at 134,739,000 tons and demand respectively at 134,751 tons. In regards to global production, the largest bitumen producers among others are China, the United States, South Korea, Russia, and India. However, most of the countries with refining capacity produce bitumen either for their own consumption only or for exports as well. The main producers for the region of Europe, the Black Sea, and the Mediterranean are Italy, Spain, Turkey, and Greece.

The demand, on the other hand, is formulated by countries that have a need for construction and road paving materials such as China, the US, Indonesia, Vietnam, and France. Even though most of these countries produce an amount of bitumen, imports are required to cover their needs. Importing countries for the Mediterranean region are primarily located in North Africa such as Morocco, Algeria, Libya Egypt, and Lebanon. South France is also importing bitumen through the port of Lavera. As many refineries have been recently consolidated and in order to be able to produce more high-end products with greater value like jet fuel, minor refineries were closed and fewer refineries produced and sold bitumen. A few of the European bitumen facilities that have shut down during the last years include those operated by Kuwait Petroleum in Europoort, Rotterdam, Total, and Colas in France, and ExxonMobil and Total in Antwerp. A total of more than 1 million t/yr of bitumen production capability is estimated to be lost as a result of these closures.

This fact has an immediate effect on the trading routes of bitumen transportation but also is leading to an increase in ton-miles.

Analyzing the global seaborne transportation of bitumen, it is found that 40% is transported in the Far East region, 18% in the Middle East, about 15% in the United States and Americas, 13% in the Mediterranean, about 13% in Northwest Europe and 1 to 2 % in West Africa. Maritime transportation can be performed in plastic bags or fiber drums, as well as in special containers, however, the majority is transported through specialized tanker vessels, called asphalt/bitumen carriers. These vessels are small tankers, designed to carry the product in liquid form and heat or maintain temperatures more than 150 degrees Celsius. The global fleet, which includes vessels larger than 2.000 DWT, is about 270 vessels and 10 vessels are currently on order, as of February 2023. The average asphalt/bitumen carrier is approximately 6.000 DWT and is 8-9 years old (MarineTraffic, 2023).

In the Mediterranean, Spain is the largest exporter, with the main ports being Tarragona (ASESA refinery) which has the largest production, Cartagena (Repsol), A Coruna (Repsol), and Huelva (CEPSA). Italy is also a significant bitumen producer with major exporting ports Taranto (ENI), Augusta (ExxonMobil), and Falconara (API). Greece has three bitumen-producing refineries in Aspropyrgos and Thessaloniki (Hellenic Petroleum) and Agioi Theodoroi (Motor Oil Hellas). Turkey is also a considerable exporter in the Mediterranean with the largest exporting ports being Izmit (Tupras), and Izmir (Tupras), and is expected to acquire one more bitumen terminal in Ceyhan (SOCAR).

Main bitumen exports in the Mediterranean (in thousand tons)			
	2020	2021	2022 (estimation)
Turkey	707	828	1140
Italy	1040	982	918
Spain	959	1150	819
Greece	1290	828	923

Figure 4. Main bitumen exporters in the Mediterranean region (in thousand tons)

The demand for bitumen in the Mediterranean is particularly located North Africa region, where most countries are still developing their road networking, and have insufficient domestic bitumen production. Major importing ports are Algiers, Djen-djen, Tenes and Skikda (Algeria), Mohammedia (Morocco), Rades and Sousse (Tunisia), Benghazi, Misrata and Tripoli (Libya). Libya is considered a promising importer for the region, however, is difficult to predict due to political instability. Alexandria in Egypt has the biggest single port demand through its national petroleum company's terminal Egyptian General Petroleum Corporation (EGPC). In the Black Sea, Romania is considered a major importing country with larger ports being Mangalia and Galati. A considerable demand increasing factor for the Mediterranean and Black Sea, is the destruction of cities and their road networks due to political reasons or natural disasters. Syria, Ukraine and Turkey are estimated to increase the need for bitumen in the Mediterranean region in order to reconstruct their infrastructure.

Another important aspect of the demand of bitumen is the seasonality. Due to the high temperature requirements for storage and transportation of the product, it has been observed that trade of bitumen is relatively high during spring and summer season. Another factor that affects seasonality is the difficulty to use bitumen for paving purposes in adverse winter weather. Construction companies in the region of the Mediterranean and Black Sea which has been selected in this case study, have higher demand for bitumen during the summer period which has a direct impact on the availability of the fleet and subsequently on the freight rates on bitumen transportation.

6.3. Competition in the transportation of bitumen

The seaborne transportation of bitumen is considered a niche shipping market, based on the characteristics of niche markets that are analyzed in the previous chapters of this paper. Certainly, it is a market of narrow size, compared to other liquid bulk cargoes and it is segmented, as a specialized type of vessel with limited carrying capacity is used. Charterers, who are considered to be the customers in the market of bitumen, are primarily the exporters meaning the refineries (CEPSA, ENI, MOH, etc), the importers, which are mainly construction companies such as COLAS, and the charterers that are traders such as Vitol, Gunvor, Puma Energy, and STASCo. Due to the specific characteristics and use of the commodity, the number of customers is limited compared to other shipping commodities. As many bitumen carriers are employed on time charter, it is evident that the relationship with customers is an important aspect of the bitumen market, which further demonstrates that bitumen is a niche. As a crude oil byproduct that is essential for construction, and considering the temperature restrictions in its transportation, it can be considered a high-value product per ton of transportation. Moreover, bitumen is mostly traded in short sea shipping, through smaller parcels and requiring a specific type of tanker, it is not considered as an attractive market for new entrants. It is therefore safe to assume that indeed, bitumen transportation is following the characteristics of niche markets, as they were presented in the previous chapters.

In order to examine if the bitumen market is not only characterized by the same traits as other niche markets but is also developing similar strategies, further analysis is conducted. The competition strategies that are developed within that market, are attempted to be analyzed through the tools which were presented in this paper.

Firstly, the external environment of the market is examined using Porter's five forces (Porter, 2008). The first force to be analyzed, the power of suppliers, does not seem to have a larger effect on firms managing asphalt carriers, compared to other ship management companies from other markets. Service providers such as insurers, agents, manning firms and also ship suppliers, shipbuilders, and machinery makers earn their revenues from other shipping markets as well. Moreover, they might be more robust than companies competing in the bitumen sector, however, there still has not been a report to have a higher influence on them in comparison to other shipping niches.

The power of substitutes, from the scope of commodity, is relatively small, as bitumen is still the widely adopted method of paving. The most popular alternative is concrete, whose main ingredient is cement is dry cargo shipped in bulk or unitized parcels via bulk carriers or containers. The most recent alternative to road paving which is using recycled plastic is also a dry cargo and is also not established in the construction industry.

However, substitutes in terms of other cargoes that could be carried from asphalt carriers, which are small high-heat tankers, are limited to lube oils and other oil products such as fuel oil, taking into consideration the temperature requirements that each cargo has.

As a result of the specialization on the transportation of this cargo, potential entrants would be required to invest in the acquisition of asphalt carriers. The small size and particular characteristics of asphalt tankers limit the number of cargoes they can carry, which along with the very prominent seasonality of the bitumen, imposes a high barrier to possible entrants due to high-risk investment.

Rivalry among shipping companies, particularly for the transportation of bitumen in the Mediterranean and Black Sea region which is studied in this paper, refers to the competition among traditional ship-owning and management companies and traders and charterers who manage bitumen fleets. In the first category of traditional ship owners – managers, one of the main representatives in the region is the Dutch-based Iver ships, which operates a fleet of 12 high-heat tankers, along with other fleets of product tankers, livestock carriers, and offshore platforms. Queensway Navigation is a Greek-based tanker management company that currently operates two bitumen carriers and a fleet of product tankers. There are also companies that either manage bitumen vessels but also take part in the trading of the commodity. 3B Shipping, which is part of the BB Energy Group, is involved in the trading of bitumen along with other cargoes such as crude oil, fuel oil, and other distillates. Asphaltos Trade manages a fleet of three bitumen carriers and is the only company that is involved only in trading of bitumen, being active also in the U.S. Well-known trading houses that are active in the tanker industry, have also entered the bitumen market. Gunvor is a notable commodity trading house with action in the bitumen sector. Vitol is also one of the largest traders in the energy sector and has been involved in bitumen trading worldwide and also operates bitumen terminals. Puma Energy operates multiple bitumen terminals and is primarily active in bitumen at Spain and Northwest Europe, even though the company is involved in a variety of services apart from shipping such as fuel retail, aviation, and infrastructure. Some of the largest oil companies such as Shell and BP are also involved in the trading of bitumen in Europe and the Mediterranean.

Some of the charterers in bitumen commodities are exporters who operate terminals, or importers affiliated with the construction industry, but a number of charterers also operate their own asphalt tankers. It can be therefore assumed that the power of buyers presents similarities to the rivalry among shipping companies. Managers of asphalt carriers need to have a competitive advantage not only against their rivals but also against their charterers, who may also be in a position to acquire new vessels at a lower cost than chartering them. The small number of charterers that are active in the bitumen trade, as well as the high fixed cost for operating bitumen terminals, leads to a high influence of customers as a shaping force for the strategy in the sector.

It can therefore be assumed that it is the power of buyers and the rivalry between the existing companies that have a considerable effect on the way strategy is shaped in the bitumen market, as it is illustrated in figure 5.

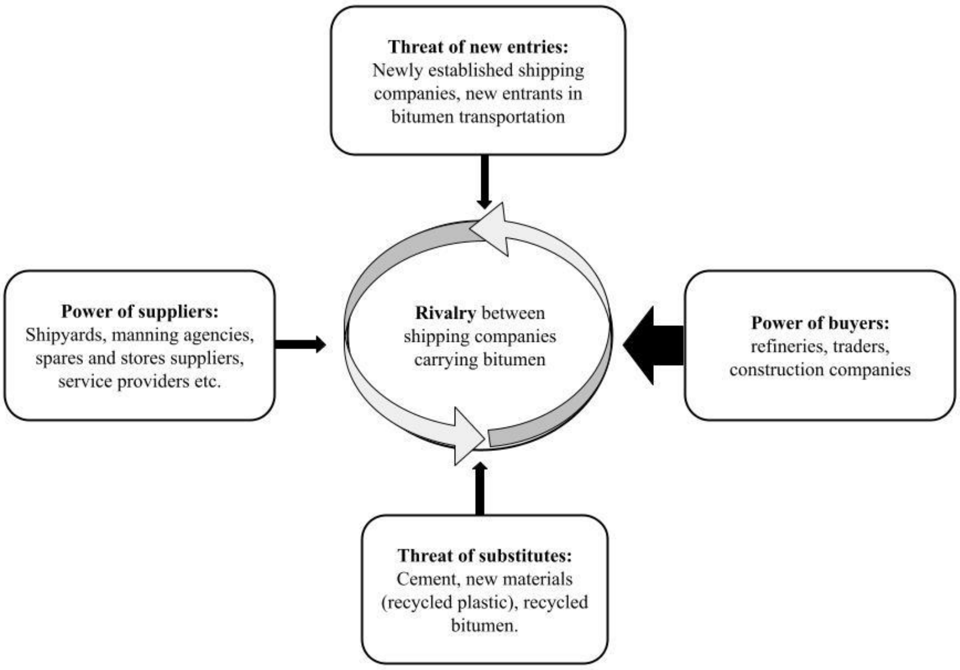

Figure 5. Porter's 5 forces for the bitumen market.

In relation to competitive strategies, among cost leadership, differentiation, and focus strategy, shipping companies active in bitumen transportation are more likely to use focus strategy and particularly focus on cost. Minimizing the operating costs of the vessels and being able to offer minimal freight rates, is still the main direction for most shipping companies.

It is noticeable, however, that majority of the businesses mentioned before which are active in that sector, are also operating ships in other similar segments. Many of them own separate fleets of product tankers, carrying other petroleum distillates, or chemical tankers, while the larger companies are active in another type of vessels carrying gas or even bulk commodities. To this end, it can be implied that businesses have entered the niche market of bitumen as part of their differentiation strategy. This is more evident in companies that were already in business of transportation of oil products, and have chosen to expand in a more segmented market of wet cargoes, and target a different group of customers by entering a niche market.

7. Conclusion

Competition in shipping is a complex concept, considering the special characteristics of the industry. The paper aimed to identify the ways in which competition is formed in niche markets of the shipping sector. In particular, this thesis addressed the following questions;

(1) To examine the ways in which niche markets occur in the shipping industry, and provide relevant examples;

Through a thorough examination of the ways niche markets are shaped, it is clear that these types of markets are present in the maritime industry. There are characteristics such as the smaller size, concrete market segmentation, strong customer relations, increased service or product value, and comparative low but existent attraction to competitors that are evident in niche markets. Examples of niche markets in the shipping industry can be found in liner shipping, such as cruise shipping and some generalized cargoes, but also in tramp shipping such as industrial chemicals, potable liquid cargoes, and LNG.

(2) To analyze how the competition is formed between shipping companies in niche markets and establish the competitive strategies that are primarily used;

Competition within shipping companies is depending heavily on the external and internal analysis of the specific market in order to understand the factors that impact that market and what is company's comparative advantage. Assessing the existing literature, business models analyzed in this study, such as resource-based theory, value chain, and benchmarking are considered beneficial for the identification of the competitive advantage of a business in the maritime sector. The results on the competition strategies followed by shipping companies suggest that the use of two competitive strategies is more favorable for a business's performance. Cost and differentiation strategies, even though they seem incompatible, can be easily attained with the use of modern technology (Papadakis, 2016). Results imply that the combination of those two competitive strategies is optimal in shipping as well (Panayides, 2003). However, based on findings, the size and the type of cargo carried are the best indicators of the most favorable competitive strategy.

(3) To identify the characteristics of the bitumen market, to determine whether it consists a niche, and to analyze the way strategy and competition are developed within that sector.

Moreover, by examining the case of bitumen, this paper has shown the competition strategies of that specific market. It is evident through the interpretation of niche markets, that its distinct features can be found in numerous instances within the maritime industry. In the bitumen sector, the use of Porter's five forces implied that the power of buyers, in this case, the charterers, and the rivalry among competitors are the strongest external forces. As imposed by the case study, the bitumen sector is a segmented, market with specific features that fall into the definition of a niche market. Within that context, bitumen transportation in the Mediterranean and Black Sea region, studied in this paper is a small organized market that is still emerging. Ship managing companies in that sector are primarily focused on offering low-cost services, which is the most notable strategy followed by the leaders in the sector, but also consider bitumen as a successful niche market that is part of their differentiation strategy.

The results reported in this paper should be considered in light of some limitations. A considerable part of the literature which was reviewed for the purpose of this study was published in the previous century, therefore did not take into account advancements in technology and information available between competitors. Moreover, even though the competition is widely studied, there was not an abundance of research on the shipping sector in particular. Finally, the lack of published accredited data on bitumen, lead to the use of the author's personal notes and previous knowledge. Moreover, there was a geographical limitation for the data which originated primarily from the Mediterranean and Black Sea region, which has impacted the reliability and extent of the results of the case study. Further research should be conducted on bitumen, with the use of larger scale data, as well as in other shipping niches, as there are very commonly occurring.

The outcome of this thesis is complementing the literature, by addressing competitive strategies in shipping and by showcasing how competition in segmented markets is shaped. Relying on the theories and models associated with this paper, one is capable to adjust the findings in other shipping markets of niche nature, apart from the bitumen.

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